

THE
NATURAL HISTORY
OF THE
SCARBOROUGH DISTRICT

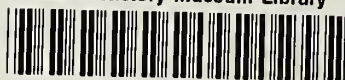
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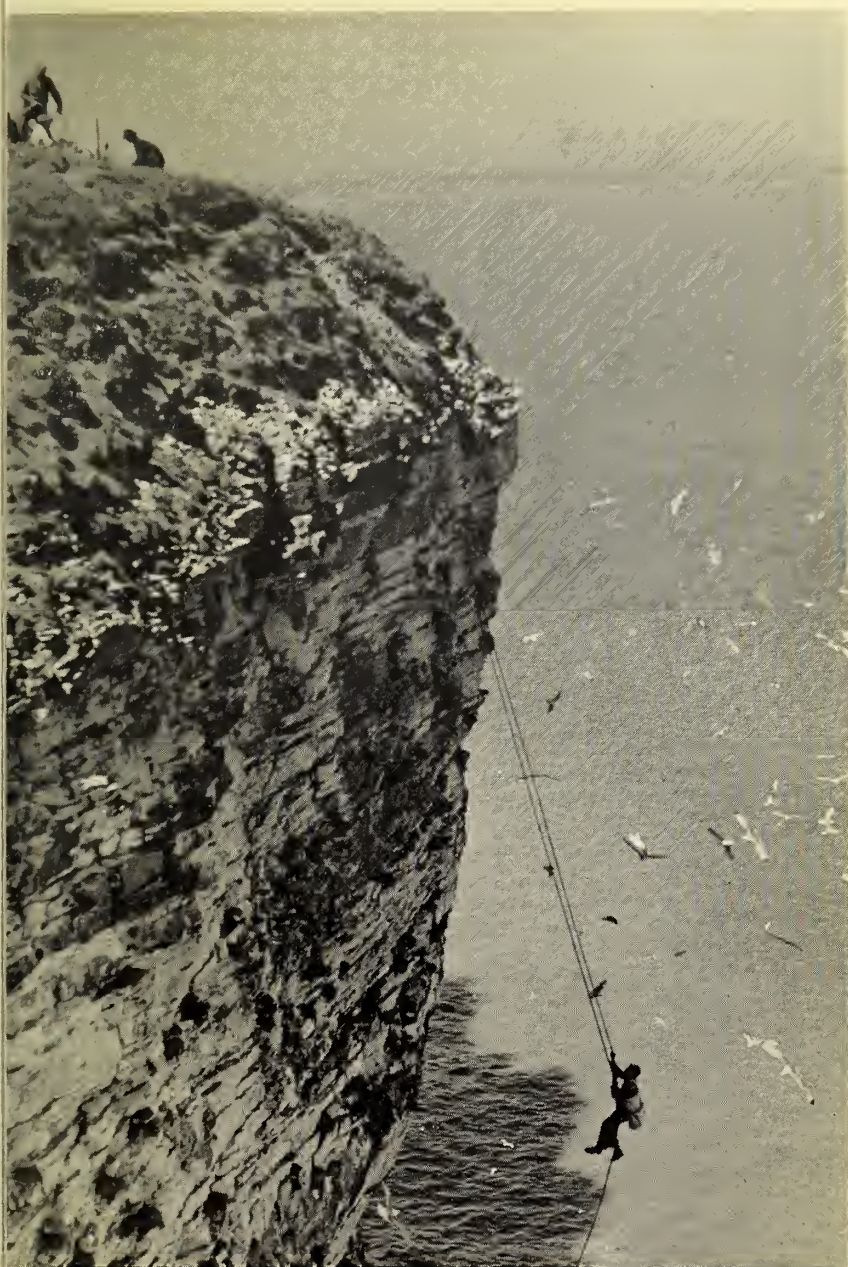
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THE
NATURAL HISTORY
OF THE
SCARBOROUGH DISTRICT

VOLUME 2 - ZOOLOGY



THE BEMPTON CLIMMERS

See note on page VII
Photograph : Yorkshire Post

Scarborough Field Naturalists' Society

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Scarborough.

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The letters come with their compliments the full value of the Scarborough
Natural History. They apologize for the great delay which has been caused
by a chain of circumstances entirely beyond their control.



THE
NATURAL HISTORY
OF THE
SCARBOROUGH DISTRICT

VOLUME 2 - ZOOLOGY

Edited by
G. B. WALSH, B.Sc., and F. C. RIMINGTON, M.P.S.

X only

X only

with a Foreword by

Professor E. A. SPAUL, D.Sc., Ph.D., F.Z.S.,
Professor of Zoology at the University of Leeds

THE SCARBOROUGH FIELD NATURALISTS' SOCIETY

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PREFACE

The present volume on Zoology contains the latest known work on the fauna of the Scarborough District.

From the very nature of things the lists cannot be complete, since the fauna and flora fluctuate from year to year; moreover the greater part of the area has not been fully investigated and many sections of its inhabitants have not yet been collected and studied.

Nevertheless it furnishes a groundwork on which succeeding generations can build and from which they can draw conclusions as to the changes brought about by time and new conditions of the countryside.

We should like to thank all those who have helped us in so many ways in the preparation of this work. We regret to have to record the loss by death during that time of our valued friends and collaborators James Meikle Brown, Edward R. Cross, James M. Gloag and E. Arnold Wallis.

We also wish to acknowledge our deep indebtedness to Athol J. Wallis, son of Arnold Wallis who carried out with rare efficiency the work of proof-reading the present volume.

In 1954 the Senior Editor lost his sight owing to glaucoma. After this date most of the work of preparing this book for the press was performed by the Joint Editor, Mr. F. C. Rimington, to whom the Society expresses its deep and grateful thanks for the excellent way in which it was undertaken.

Finally our special thanks are due to Professor E. A. Spaul, of Leeds University, for writing the foreword and for the great interest he has taken in our work since its inception.

NOTE ON FRONTISPIECE

THE BEMPTON CLIMMERS

The passing of the 1954 Bird Protection Act has brought to an end a tradition which had been carried on for the past two and a half centuries, for now that the Guillemot and Razorbill are fully protected by law, the taking of their eggs has become a punishable offence. In 1955, for the first time for almost 250 years, the birds that nest on the cliffs of Bempton and Flamborough have done so free from molestation by climbers descending the cliffs egg-gathering.

The right to climb any stretch of the cliffs belonged to the farmer who owned or tenanted the fields adjacent to the cliff-edge, and this privilege was commonly extended to the farm-workers. Latterly the farmers "rented" the right to climb to the various teams who worked the different sections of the cliffs.

A team consisted of four men, the "climber", the "lowerer" and two assistants. Their equipment included two stout hemp ropes, 300 feet in length, long spikes with pulley-wheels attached for guiding the rope over the cliff edge, a steel-lined girdle worn by the lowerer and round which the rope slid to give more purchase to his hold, and in more recent years a hand-winch for hauling the climber up the cliff face. Since the war years the climber usually wore a steel helmet, but in earlier days a top-hat stuffed with dry grass to break the impact of any dislodged stones, was the customary headgear.

A detailed account of a descent is given by T. H. Nelson in "Birds of Yorkshire", and the methods used then were still in use in 1954. The signals used by the climber to indicate his wishes to the lowerer out of sight above, have been handed down from generation to generation.

In 1834 the eggs sold for sixpence a score, by 1907 the price was 12 to 16 for a shilling and in 1954 the common colourings of the Guillemots' and Razorbills' eggs cost sixpence each if bought direct from the climbers at the cliff-top. At all times peculiarly marked or "fancy" eggs fetched much higher prices, up to 7/6 or 10/- each.

About the middle of the 19th century climbing almost stopped because of an even more ruthless persecution of the birds by gunners, who often never even troubled to pick up the birds they had killed or maimed. So intense was the shooting that in 1869 the "Sea-Birds Preservation Act" was passed as a result of public indignation.

After the passing of this Act climbing was recommenced as the birds recovered in numbers, and writing in 1907 Nelson quotes 130,000 eggs as an average haul for a season. He claims that despite this tremendous loss the Guillemot was not decreasing in numbers, but quite certainly it did so, steadily, in later years. So much so that the Wild Birds and Eggs Protection Acts Committee of the Yorkshire Naturalists' Union held a joint meeting with the climbers in 1938 in an endeavour

to restrict, by mutual consent, the dates between which climbing should be allowed. In "Yorkshire Birds", Ralph Chislett, who attended that meeting, gives details of the points raised on both sides, but although the climbers were impressed by the arguments put forward, they did not agree entirely to the restrictions suggested.

The decrease in the number of Guillemots on the Bempton cliffs had almost reached the stage when serious action would have had to be considered had the 1954 Act not reached the Statute Book and given protection through its general application to all birds.

A. J. Wallis.

The publication of this book would have been impossible without the generous financial assistance from the Royal Society, the Corporation of Scarborough, the Executive Committee of the (late) Scarborough Philosophical and Archæological Society, and the executors of the late W. J. Clarke.

FOREWORD

Professor E. A. Spaul, D.Sc., Ph.D., F.Z.S.

Man has been interested in animals and their natural surroundings since early times but whereas in the beginning this interest was related to the extent animals could serve useful purposes or contribute to his essential needs, it was only during the last century or so that it became a scientific study concerned with the description, identification and classification of animals. The discoveries of Darwin and other naturalists gave stimulus and prestige to the study of Natural History and encouragement to natural history societies whose activities have produced extensive surveys of the flora and fauna of many districts, whilst a vast amount of information was gathered for the study of species and systematics. Nowadays the latter contribution is perhaps no longer significant, for these subjects, now well established, have become the province of experts and specialists with adequate libraries, laboratories and type collections available for reference to deal with the advance in knowledge and the necessary need for accurate detail in identification.

There are however other important aspects of field work which need the active help of field naturalists. The last three or four decades have seen the rise of ecology - a new scientific natural history seeking to establish a more exact understanding of the inter-relationships between plants and animals and their environment and gain thereby some measure of the general pattern of life. The problems and objectives are different from the old, and new methods and techniques are required, but the plants and animals have to be named so that as before the records of naturalists are of paramount importance. Much needed detail exists in field records, yet field workers can obtain still more necessary information of value and importance by an appreciable extension of the range and scope of their observations and enquiries to give more precise detail of the physical characteristics of an environment and discover more about the lives, habits and relationships of plants and animals. In this way a notable contribution can be made to investigations which are only beginning to explore a great new and important field of knowledge.

Again, continuous recording in any locality particularly over years can reveal the influence of alterations in the physical environment through natural agencies or human activity with the loss or addition of species or changed habits and behaviour following modification and alterations in social structure or activities. Industrialism, town planning and pollution for instance, can produce changes in the relations and distribution of plants and animals possibly even more profound than those due to storm, flood or landslide. These effects have not received all the attention from naturalists they deserve.

Field records are not always readily accessible as they are either scattered in various publications or shut away in the files or record

books of natural history societies and it was a very worthy and far-seeing decision of the Scarborough Field Naturalists' Society to gather together their records collected for over a century and publish them so that they would be available to all who need them. The publication in two volumes is not only a fine tribute to the labour and enthusiasm of past and present members, including many distinguished authorities, but remarkable for the surprising wealth of detail in a variety and diversity of field interests. It is also of first-class importance, for the area covered possesses many unique and notable natural features and is famed for its attractive coastline and landscapes, whilst part is included in a National Park. The value and success of the production should encourage other societies to ensure the publication of their records. It is fortunate that these volumes appear when there is an increasing interest in the study of nature and also at a time when a new approach is evident in natural history. Naturalists are becoming no longer content merely to collect and identify, but seek a wider and more intimate knowledge of life using their facts to interpret problems that confront them. It is appropriate too that these volumes arrive when there is a growing concern for our countryside and a realisation of the need to conserve and preserve our flora and fauna which is now appreciated as a national heritage.

All these circumstances fully justify the publication and emphasise its value and usefulness.

Finally, a grateful recognition must be given to the immense labour of Mr. G. B. Walsh, the editor. The completion of the work fittingly crowns years of devotion to natural history and enthusiasm in support of the Scarborough Field Naturalists' Society, and it brings a climax of distinction to his many contributions to the subject. It has been no light task, difficulties seemed unending, many disappointments have had to be faced, but his patience has persisted and his purpose never lost its strength. He did not falter, and now he has triumphed. Throughout he has been efficiently and effectively supported by Mr. F. C. Rimington, and for this he is especially deserving of our gratitude.

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ACKNOWLEDGEMENTS

The Editors desire to express their grateful thanks to the following for permission to reproduce the photographs which illustrate this volume. The Yorkshire Post (Frontispiece), Dr. J. H. Fraser (Pl. II), Miss J. Bown, of the Observer (Pl. III), Mr. V. J. Watson (Pls. IV and V), Mr. E. Horsfall Turner (Pl. VI), Mr. A. J. Wallis (Pl. VII), Mr. Peter Scott and Mr. J. V. Beer (Pl. VIII), Mr. R. Chislett (Pl. IX), Field Sports and Mr. W. Parkinson for the loan of Pl. X block.

THE SCARBOROUGH FIELD NATURALISTS' SOCIETY

A SHORT HISTORY

A. J. Wallis.

This volume, dealing with the Fauna of the Scarborough District, and the companion volume published in 1953 on the Geology and Botany, have been compiled as the result of the careful observations and recordings made during the past 67 years by the members of the Scarborough Field Naturalists' Society. In order to make these two volumes as complete as possible help has been sought from specialists in various fields of Natural History which have not been covered by members so comprehensively as some, but in the main the majority of the records here recorded have been made by local men and women who have joined the Society and have shared their knowledge with their fellow members, each adding his own quota to the records which have been so meticulously kept.

On 4th November, 1889, six men met in a room behind a stationer's shop in Westborough with the precise purpose in mind of forming a natural history society. Their names were W. J. Clarke, W. Gygell, J. A. Hargreaves, E. Parker, T. Rines and J. H. Rowntree. None of them is now living, but their memory has been assured through the publication of these records which include many made by these founder members.

Notice of that first meeting was sent to the press, with details of the objects and aims for which the society was being formed. The response was immediate, for a week later a second meeting was held and 20 townsmen were received into membership and Mr. J. H. Rowntree was appointed the first president.

The membership of the Society soon grew, and while there have been the usual ups and downs, the total number of members paying their annual subscription remains remarkably steady at between 100 and 120.

The subscription rate fixed at the outset of the Society was 5/-d. per year, and it has remained at 5/-d. without increase ever since.

At first the meetings were held in the private houses of members, and at these meetings the procedure was the same as it is to-day. Individual members brought to the meeting specimens they wished to show or made a report on some observation of interest, and afterwards a paper was read dealing with some aspect of the natural history of the district.

The opportunity the meetings give for any member who wishes to show a specimen of interest, or to seek help and advice over something that cannot be readily identified or understood has proved to be of such value that the first half of all meetings is given over to exhibits

and reports of this kind. In fact at three meetings each year the whole of the evening is thrown open for the members to exhibit their finds, and no set paper is read on these occasions. The three meetings are arranged to coincide as nearly as possible with the peak period of the spring, summer and autumn seasons.

The meetings continued to be held fortnightly in private homes until January, 1891, when the Society became affiliated to the Scarborough Philosophical and Archæological Society which had been in existence for some many years and had included in its ranks many well known naturalists. The Philosophical Society owned the Museum at the bottom of Vernon Road, and from 1891 until 1936 the meetings were held there. From accounts that have been handed down these meetings were of a very high standard and each meeting came to a close because of the lateness of the hour and not through a lack of enthusiasm.

In 1936 the Museum was handed over to the Scarborough Corporation for the benefit of the town, and the Philosophical Society ceased to exist in its original form. The Naturalists' Society continued with its activities and its meetings have been held in the Public Library ever since.

Many famous local men and women have been members of the Society and it would be out of place to mention any particular one by name, but through their interest in the Society and the natural history of the district they have all shared in adding to the cultural life of the town.

The help and advice of the Society has been called upon on occasions, and individual members are frequently being asked to identify unusual creatures or explain peculiar phenomena that may occur in the district. In 1898, for instance, Lord Londesborough sought the advice of the botanical members about planting rare and showy shrubs in Raincliffe Woods, and was advised that the woods should be left undisturbed and in their natural state.

In more recent times the Borough Engineer discussed the cutting of the reeds at the Mere with two members in order that as little disturbance as possible to the reed warblers' nesting place should result, and the Forestry Commission has always shown a willingness to help in preserving any piece of ground or particular plant which has been brought to their notice by the Society or its members.

On one memorable occasion a dinner was held at the home of one of the members. All those who attended had to take with them some contribution to the fare consisting of or made from some wild fruit and other food. Rook and sparrow pie, toadstools and various dishes made from berries were included in the menu, with garden snails for savoury. The occasion had an unhappy ending when a bottle of gale beer brought by one member blew its cork with decidedly damaging effects on their hostess's ceiling. The experiment was not repeated.

In 1906 the Society staged the first of its two exhibitions. On the first occasion it was staged at the Grand Hotel, in conjunction with

other sections of the joint Society, and was put on with the sole purpose of raising funds for the parent body, the Philosophical Society. The exhibition, which was made up of living specimens in so far as was possible, raised £388 during the three days it was on show.

The second exhibition was held in 1948, and had no motive other than a desire of the members to interest the people of the town in the Society's activities. No charge was made though visitors were invited to contribute a donation if they wished. This time the exhibition was held in the Public Library, and again the emphasis was on living specimens rather than museum skins and exhibits.

An invitation was sent to all local schools to attend, and this proved so successful that the authorities asked that the exhibition be kept open for a day longer than was originally intended.

These two volumes are ample evidence that not all the work done by the Society and its members has been in museums and lecture rooms. A lot of valuable observing and collecting of information has been carried out by individual members, and it is most encouraging that in recent years the younger members have taken their full share in this work.

For several years after they had left school and before their other engagements took them away from Scarborough two boys did most careful and thorough work on the Lepidoptera, working alone or together.

Some time ago, working under the expert guidance of the curator of the Scarborough Natural History Museum at Wood End, Mr. G. G. Watson, a group of boys spent a whole year observing and studying, both in the field and in the museum, the life history of the badger. At the end of the year the report of their findings was presented to the Society and is a most comprehensive survey of this creature's status in the district, its habits and structure.

For the compilation of this and the previous volume help was sought from two or three members who had no, or only little, previous knowledge of the section they were asked to undertake and prepare for printing. The enthusiasm with which they approached their task, both by field work and by research into past records has been of great encouragement to the Society.

It was hoped at one time that this publication would be published on the occasion of the Society's diamond jubilee, and although that hope was not fulfilled, it is still our earnest wish that the future members will not regard this as the culmination of the Society's efforts, but that it will be an indicator to the mass of knowledge which is still waiting to be unfolded in the Scarborough District.

PRESIDENTS AND SECRETARIES
OF THE
SCARBOROUGH FIELD NATURALISTS' SOCIETY
FROM
1889 TO 1956

President	Secretary or Joint Secretaries.
1889 J. H. Rowntree.	W. Gyngell.
1890 J. H. Rowntree.	W. Gyngell.
1891 J. H. Rowntree.	W. Gyngell.
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1893 R. Gilchrist.	D. W. Bevan.
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1894 W. J. Clarke, F.Z.S.	D. W. Bevan.
	R. Gilchrist.
1895 W. Gyngell.	R. Gilchrist.
	W. J. Clarke, F.Z.S.
1896 J. C. Harrison.	R. J. Fryer.
	W. Gyngell.
1897 D. W. Bevan.	R. J. Fryer.
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	R. Herbert.
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	E. A. Wallis.
1901 Dr. J. Harvey.	E. A. Wallis.
	G. J. Jones.
1902 W. Gyngell.	G. J. Jones.
	E. B. Lotherington.
	W. J. Clarke, F.Z.S.
1903 R. Gilchrist.	G. J. Jones.
	E. B. Lotherington.
	W. J. Clarke, F.Z.S.
1904 J. Irving, M.D.	T. N. Roberts.
	Miss I. Simpson.
	W. J. Clarke, F.Z.S.
1905 T. N. Roberts.	Miss I. Simpson.
	D. W. Bevan.
	W. J. Clarke, F.Z.S.

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1906	D. W. Bevan.	W. J. Clarke, F.Z.S. A. S. Tetley, M.A., F.E.S.
1907	E. A. Wallis.	A. I. Burnley. A. I. Burnley.
1908	W. J. Clarke, F.Z.S.	W. J. Clarke, F.Z.S. Miss N. Miers. W. J. Clarke, F.Z.S. Miss N. Miers.
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1910	A. I. Burnley.	E. A. Wallis. W. J. Clarke, F.Z.S. Miss N. Miers.
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1913	A. S. Tetley, M.A., F.E.S.	T. B. Roe. E. C. Horrell. W. J. Clarke, F.Z.S. Mrs. Wilcock.
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1915	T. B. Roe.	W. R. Grist, B.Sc.
1916	E. R. Cross, M.P.S.	W. R. Grist, B.Sc.
1917	E. R. Cross, M.P.S.	W. R. Grist, B.Sc.
1918	E. R. Cross, M.P.S.	G. W. Temperley.
1919	Miss H. I. T. Bruce.	G. W. Temperley.
1920	T. N. Roberts.	G. B. Walsh, B.Sc.
1921	A. T. Wallis.	G. B. Walsh, B.Sc.
1922	D. W. Bevan.	G. B. Walsh, B.Sc.
1923	G. B. Walsh, B.Sc.	E. A. Wallis.
1924	G. B. Walsh, B.Sc.	E. A. Wallis.
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1927	A. E. Peck.	C. B. Haigh, M.Sc.
1928	E. A. Wallis.	C. B. Haigh, M.Sc.
1929	H. M. Hirst, M.P.S.	C. B. Haigh, M.Sc.
1930	L. H. Thompson.	C. B. Haigh, M.Sc.
1931	G. B. Walsh, B.Sc.	C. B. Haigh, M.Sc.
1932	C. B. Haigh, M.Sc.	H. H. Farwig.
1933	H. E. Benham.	H. H. Farwig.
1934	G. B. Walsh, B.Sc.	H. H. Farwig.
1935	Mrs. R. A. Leefe.	H. H. Farwig.
1936	W. J. Clarke, F.Z.S.	H. H. Farwig.

President

Secretary or Joint Secretaries.

1937	S. Rowntree.	H. H. Farwig.
1938	D. W. Bevan.	H. H. Farwig.
1939	W. J. Clarke, F.Z.S.	H. H. Farwig.
		G. B. Horsman.
1940	W. J. Clarke, F.Z.S.	H. H. Farwig.
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1947	F. C. Rimington, M.P.S.	G. B. Walsh, B.Sc.
1948	F. C. Rimington, M.P.S.	G. B. Walsh, B.Sc.
1949	E. A. Wallis.	A. J. Wallis, A.C.I.S.
1950	E. A. Wallis.	A. J. Wallis, A.C.I.S.
1951	D. J. Price, B.Sc.	A. J. Wallis, A.C.I.S.
1952	D. J. Price, B.Sc.	A. J. Wallis, A.C.I.S.
1953	Miss K. Wrightson, M.P.S.	A. J. Wallis, A.C.I.S.
1954	Miss K. Wrightson, M.P.S.	J. R. Lidster.
1955	R. J. R. Giblett, M.A., F.R.G.S.	J. R. Lidster.
1956	R. J. R. Giblett, M.A., F.R.G.S.	Miss K. Wrightson, M.P.S.

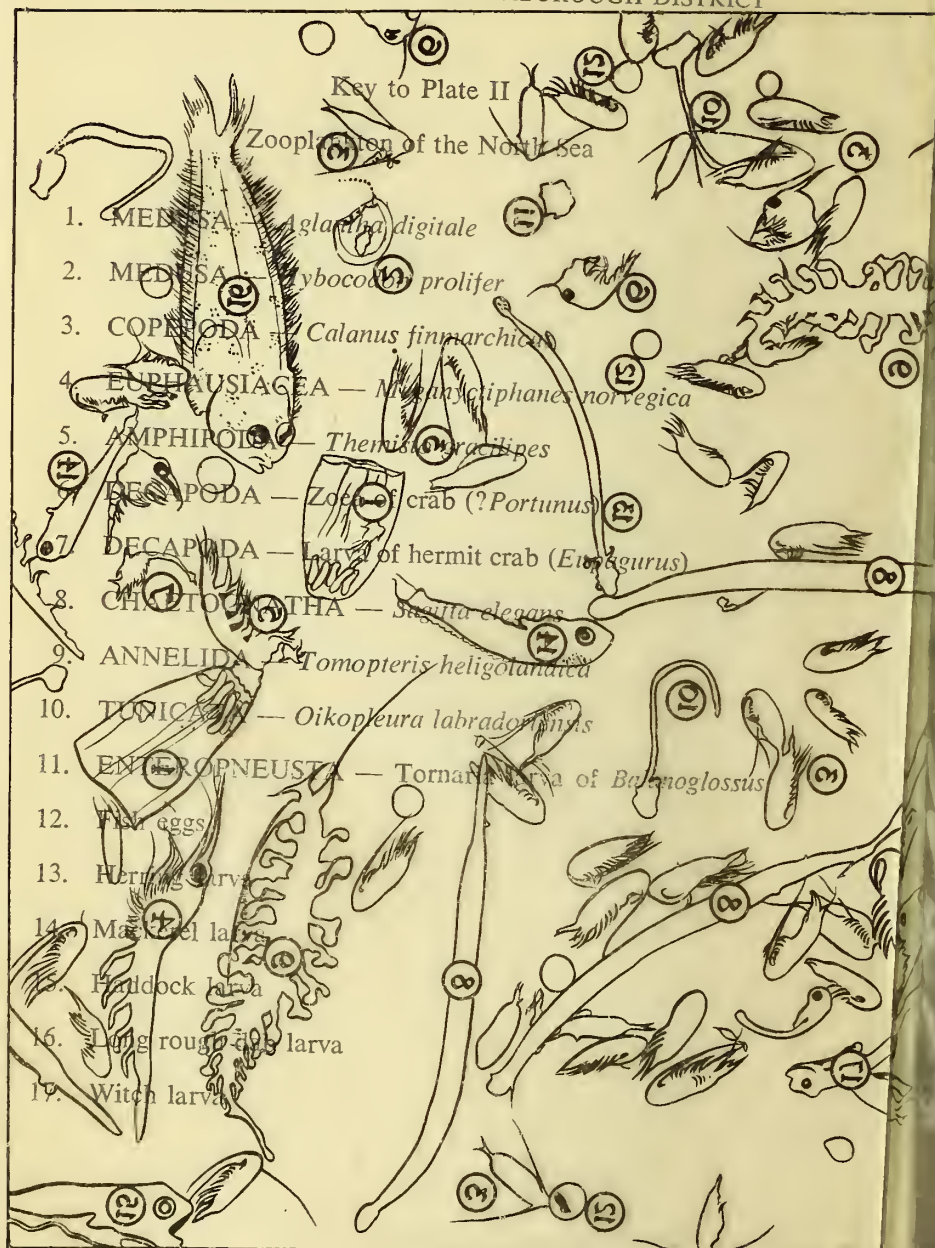
Key to Plate II

Zooplankton of the North Sea

1. MEDUSA — *Aglantha digitale*
2. MEDUSA — *Hybocodon prolifer*
3. COPEPODA — *Calanus finmarchicus*
4. EUPHAUSIACEA — *Meganyctiphanes norvegica*
5. AMPHIPODA — *Themisto gracilipes*
6. DECAPODA — Zoea of crab (?*Portunus*)
7. DECAPODA — Larva of hermit crab (*Eupagurus*)
8. CHAETOGNATHA — *Sagitta elegans*
9. ANNELIDA — *Tomopteris heligolandica*
10. TUNICATA — *Oikopleura labradoriensis*
11. ENTEROPNEUSTA — Tornaria larva of *Balanoglossus*
12. Fish eggs
13. Herring larva
14. Mackerel larva
15. Haddock larva
16. Long rough dab larva
17. Witch larva



NATURAL HISTORY OF THE SCARBOROUGH DISTRICT

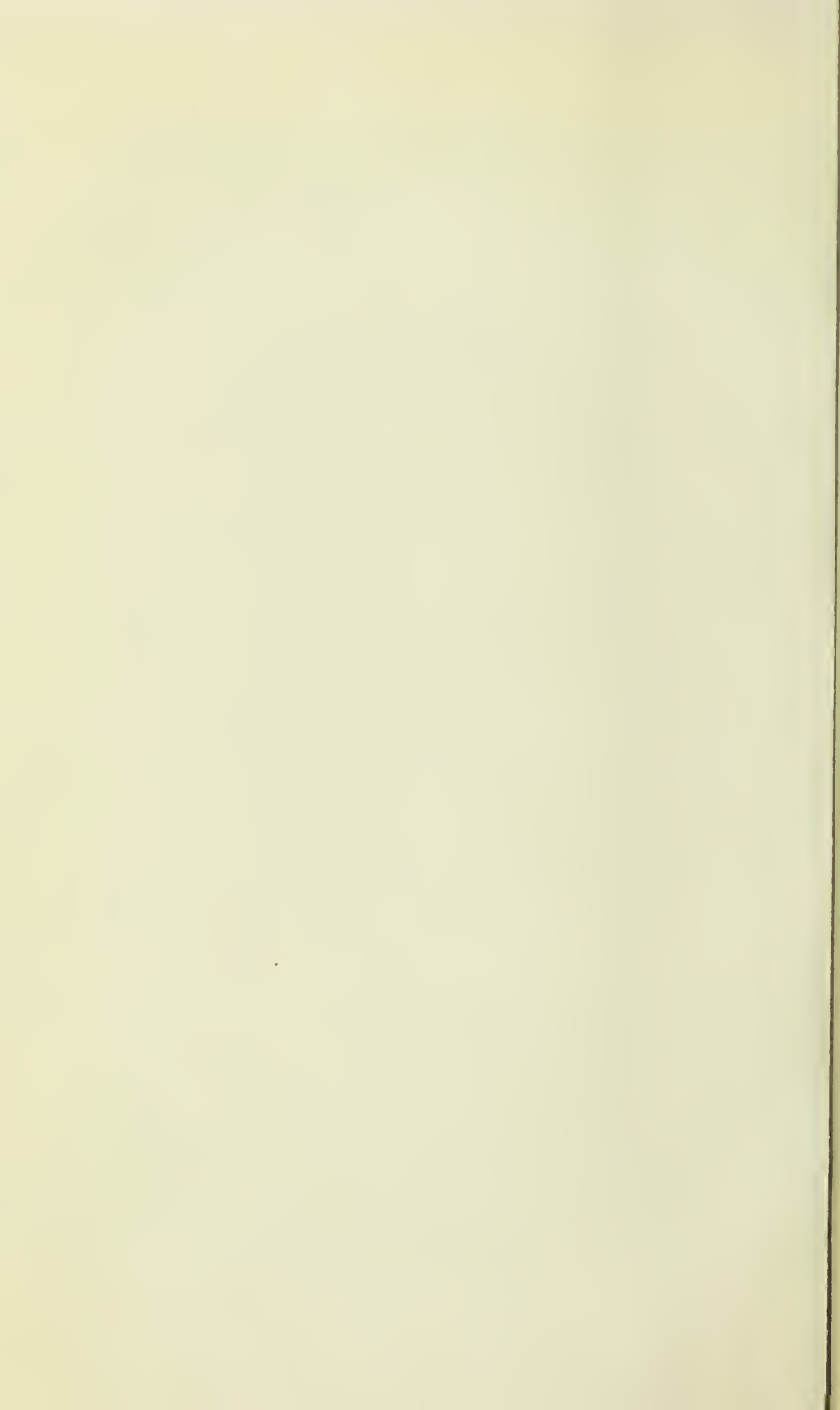




ZOOPLANKTON OF THE NORTH SEA

Photograph : J. H. Fraser

facing page 6



MARINE INVERTEBRATES

Professor E. A. Spaul

INTRODUCTION

The coastline of the Scarborough district extends roughly in a direction N.N.W. to S.S.E., and the differing quality, arrangement and varying resistance to the sea of the geological formations along its length have produced the diversity of character and scenic beauty for which it is so famed. High cliffs and prominent headlands with little or no shore at their base contrast with the wide sweep of the exposed bays where the soft material has been washed away to give a rocky or sandy expanse. Weathered boulders, rocky ledges, rock pools, rough and uneven scars extending along the shore or out to sea, stretches of sand or pebble, steep or shallow shelving shores, provide between the tide levels along this coast an unlimited range of habitats for marine life which, although abundant, is not so rich and varied as that of some other areas. Two factors in particular affect the fauna. Erosion of the coast gives shifting sand and alters or reduces the pools so that it is difficult for many shore forms to become permanently established or to maintain themselves in their habitats, whilst on the exposed rocky shores bordering upon deep water few species can withstand the violence of the storms. Again in the North Sea the water of the Atlantic coming up from the English Channel or round from the north mixes continuously with the fresh water from the rivers and the Baltic, so that there is a variation of salinity off the coast from month to month, even year to year. The temperature of the water is generally below that to the south and may be responsible for some of those northern tendencies in the character of the fauna.

Many noted naturalists, in particular W. J. Clarke, Dr. J. Irving, J. Stevenson and Rev. F. H. Woods, have contributed much by their observations in past years and valuable additions to our knowledge continue through the activity of many experts and experienced enthusiasts. The records are confined to those collected along a stretch of coast from Sandsend to Bridlington and include not only those of the Scarborough Field Naturalists' Society but others scattered in various publications such as "The Annals and Magazine of Natural History", "The Naturalist", "The Transactions of the Hull Scientific Field Naturalist Club", "The Victoria History of the County of York", etc. The information from all these sources has been gathered into the following lists and classified as far as possible according to the latest authorities. Some of the earlier records are inadequate in detail and description in the light of the exacting requirements of modern taxonomy and in consequence it has not been easy in every case to establish with complete certainty the exact identity or classification, especially in the absence of actual specimens. However, with very few exceptions, it has been possible to include all those

recorded, but it will be necessary to check and review many and provide more complete descriptions. Location, time or season and habitat are also important and in this respect many records are deficient. Many species are recorded frequently, others occasionally, but it is not always evident whether the species is rare or common. Some records give an indication of distribution, but few give an indication of numbers or fluctuations.

Some parts of the coast have been surveyed more systematically and consistently than others, mainly on account of differences in accessibility, but there appears to have been little or no continuous observation in any part throughout a long period, whilst little is known of the plankton, and the sea bed off the coast although reported to be rough and of varied character has yet to be thoroughly explored, since what is known is the result of odd trawling expeditions and the identification of material cast up on the shore in stormy weather.

Nevertheless, a great amount of valuable information about the animals living on this shore and their relationships has been brought together, and it will form a useful starting point for more extended and specialised studies, especially those seeking a measure of the changes which are undoubtedly occurring under the influence of erosion, weather, and other factors.

Acknowledgement must be made to the late H. Whitehead, B.Sc., for his valuable assistance in the compilation of this fauna list. He devoted much time and painstaking effort to the preparatory work and his attention to the accuracy of the records was invaluable. The writer is also indebted to Mr. H. Sylvester-Bradley for his records of the Ostracoda.

Finally, special thanks are due to Dr. I. Gordon, Dr. A. B. Hastings, Dr. M. Burton, Dr. W. J. Rees, Dr. J. P. Harding, Mr. S. Prudhoe, Miss P. L. Cook, Miss A. M. Clark, and Mr. H. Ricketts of the British Museum (Natural History) for checking and revising the classifications in keeping with the latest authorities, and other help and ready co-operation.

The following were used for general and special reference :

Plymouth Marine Fauna.

Marine Fauna of the Isle of Man.

The Littoral Fauna of Great Britain—N. B. Eales.

Ray Society Publications—J. S. Bowerbank, T. A. Stephenson, G. T. Allman, W. C. McIntosh, T. A. Scott, J. Alder and A. Hancock, C. Eliot, N. J. Berrill.

A Treatise on Zoology, Pts. I, II, VII—Ray Lankester.

Faune de France, V & XVI—P. Fauvel, IX—E. Chevreux & L. Fage.

The British Marine Mollusca, J. Conch. XIX, No. 7, 1932—

R. Winckworth.

Handbook of the Echinoderms of the British Isles, 1927—T. Mortenson.
The Linnean Society of London, Synopses of the British Fauna (Nos. 2, 3 and 7).

- The Crustacea of Norway—G. O. Sars.
 Biologie der Tiere Deutschlands—P. Schulze.
 Klassen und Ordnungen des Tierreichs—H. G. Bronn.
 The Invertebrata, 3 vols.—L. H. Hyman.
 A Monograph of the recent Cephalopoda—British Museum, 1929-1932—
 G. C. Robson.
 Fauna und Flora des Golfes von Neapel—Die Polycladen, 1884—
 A. Lang.
 A Monograph of British Medusae, 1953—F. S. Russell.
 The Dinoflagellata of Northern Seas—M. V. Lebour.
 Protozoology—R. R. Kudo.
 Transactions of the Linnean Society, London (Zoology), 1916, 11,
 pp. 197-299 and Jour. Roy. Micro. Soc., 1930, 50, pp. 6-84—
 E. Heron Allen & A. Earland.
 Bibliography of Key Works for the identification of the British Fauna
 and Flora—The Systematics Association—was used for additional
 references to individual groups.

The phyla are arranged in the following sequence :—

Protozoa
Porifera
Coelenterata
Platyhelminthes
Nemertinea
Annelida
Sipunculoidea
Priapulidea
Arthropoda
Mollusca
Echinodermata
Bryozoa
Chaetognatha
Phoronidea
Tunicata

Key to the names of recorders, and other abbreviations.

The publication is added when not in the records of the Scarborough
 Field Naturalists' Society.

M.B.A.	—	Marine Biological Association (V.H.Y.).
W.B.	—	W. Bean, V.H.Y. ; Jour. of Conchology, 1910.
D.W.B.	—	D. W. Bevan.
J.S.B.	—	J. S. Bowerbank, V.H.Y.
G.S.B.	—	G. S. Brady, V.H.Y. ; Jour. of Conchology, 1910.
T.B.	—	T. Brewster.
H.B.	—	H. Britten.
A.I.B.	—	A. I. Burnley, Naturalist, 1919, 1922.
J.D.B.	—	J. D. Butterell, V.H.Y.
W.J.C.	—	W. J. Clarke, V.H.Y. ; Naturalist, 1931, 1932.
T.D.A.C.	—	T. D. A. Cockerell, Naturalist, 1888.

H.C.	—	H. Crowther, V.H.Y.
J.P.A.D.	—	J. P. A. Davis, Naturalist, 1890, 1891; Jour. of Conchology, 1910.
N.B.E.	—	N. B. Eales, Lab., 1938.
J.E.	—	J. Ellis, Corallina, 1755; Natural History of Zoophytes, 1786.
G.F.	—	G. Fysher, Naturalist, 1927.
P.H.G.	—	P. H. Gosse, V.H.Y.
O.G.	—	O. Grabham, V.H.Y.; Naturalist, 1896.
W.G.	—	W. Gyngell, Jour. of Conchology, 1910.
R.H.	—	R. Hanitsch, Proc. Liverpool Biological Soc., 1888-89.
J.A.H.	—	J. A. Hargreaves, Jour. of Conchology, 1910.
J.H.H.	—	J. H. Harman.
J.C.H.	—	J. C. Harrison.
W.C.H.	—	W. C. Hey, V.H.Y.; Jour. of Conchology, 1910; Naturalist, 1901, 1903.
T.H.	—	T. Hincks, V.H.Y.; British Hydroid Zoophytes, 1868.
J.I.	—	J. Irving, Jour. of Conchology, 1910; Naturalist, 1911, 1912, 1913, 1916, 1921, 1924.
G.J.	—	G. Jeffreys, V.H.Y.; Jour. of Conchology, 1910.
J.	—	Johnstone, Jour. of Conchology, 1910.
Lab.	—	Marine Laboratory, Robin Hood's Bay.
M.V.L.	—	M. V. Lebour, Naturalist, 1902; Jour. of Conchology, 1910.
L.	—	Leckenby, V.H.Y.
J.T.M.	—	J. T. Marshall, V.H.Y.; Jour. of Conchology, 1910.
F.W.M.	—	F. W. Mills, Naturalist, 1901.
E.M.M.	—	E. M. Morehouse, Naturalist, 1931, 1933.
P.	—	Parke, V.H.Y.
T.Pen.	—	T. Pennant, V.H.Y.
E.P.	—	E. Percival, Naturalist, 1922.
T.P.	—	T. Petch, V.H.Y.; Jour. of Conchology, 1910; Naturalist, 1903.
S.L.P.	—	S. L. Petty, V.H.Y.; Naturalist, 1897, 1900, 1901.
T.B.R.	—	T. B. Reynoldson, Lab., 1938.
T.Sh.	—	T. Sheppard, Naturalist, 1892, 1926.
D.S.	—	D. Solander, Natural History of Zoophytes, 1786.
J.S.	—	J. Stevenson, Naturalist, 1926, 1927, 1928, 1929.
T.S.	—	T. Stevenson, V.H.Y.; Naturalist, 1894, 1896.
S.	—	Strickland, Jour. of Conchology, 1910.
F.D.T.	—	F. D. Taylor, Naturalist, 1933.
J.V.T.	—	J. V. Thompson.
G.R.V.	—	G. R. Vine, Naturalist, 1892.
A.W.	—	A. Waller.
E.A.W.	—	E. A. Wallis
L.W.	—	Leo Walmsley.

A.T.W.	—	A. T. Watson, V.H.Y. ; Naturalist, 1912.
W.	—	Williamson, V.H.Y.
R.S.W.	—	R. S. Winpenny.
F.H.W.	—	F. H. Woods, Naturalist, 1910, 1911, 1912, 1913, 1914.
V.H.Y.	—	Victoria County History of Yorkshire.

Some records have no recorder or dates, others have a recorder but no dates, yet others have no locality given. In cases where a species is recorded several times in the same locality, the first record is given and the others noted only if they give additional information, otherwise they provide frequently information as to whether a species is rare or common.

When there are several records from different portions of the coast, they are all shown, as they give an indication of distribution. The records are arranged from north to south, and when a species is recorded at different places along the coast by the same recorder, only the dates are given and the recorder indicated at the last record of the sequence.

Phylum PROTOZOA

Class MASTIGOPHORA

Order DINOFLAGELLATA

Family PERIDINIIDAE

CERATIUM Schrank

fusus (Ehr.)—Robin Hood's Bay (Lab.).

tripos (Muell., O. F.)—Robin Hood's Bay.

Class RHIZOPODA

Order FORAMINIFERA

Family MILIOLIDAE

Sub-family MILIOLININAE

BILOCULINA d'Orbigny

depressa (d'Orb.)—Scarborough (W.B. & G.J.) ; Bridlington (F.W.M.).

ringens Lam.—Scarborough (W.B. & G.J.).

SPIROCULINA d'Orbigny

canaliculata d'Orb.—Scarborough (G.J.).

limbata d'Orb.—Bridlington (F.W.M.).

grata Terq.—Bridlington (F.W.M.).

MILIOLINA Williamson*angulata* Will.—Scarborough (W.B.).*bicornis* (Walk. & Jac.)—Scarborough (W.B.); Bridlington (F.W.M.).*boueana* (d'Orb.)—Bridlington (V.H.Y.).*circularis* (Born.)—Bridlington (F.W.M.).*contorta* (d'Orb.)—Bridlington (F.W.M.).*oblonga* (Montagu)—Bridlington (F.W.M.).*seminulum* (L.)—Bridlington (F.W.M.).*trigonus* (Lam.)—Scarborough (W.B.); Bridlington (F.W.M.).**MASSILINA** Schlumberger*secans* (d'Orb.)—Bridlington (F.W.M.).

Family TEXTULARIIDAE

TEXTULARIA Defrance*trochus* d'Orb.—Scarborough (G.J.).**VERNEUILINA** d'Orbigny*polystropha* (Reuss)—Scarborough (W. & G.J.); Bridlington (F.W.M.).**BULIMINA** d'Orbigny*aculeata* d'Orb.—Scarborough (W.).*elongata* d'Orb.—Bridlington (F.W.M.).*fusiformis* Will.—Bridlington (F.W.M.).*pupoides* d'Orb.—Scarborough (W.); Bridlington (F.W.M.).*marginata* d'Orb.—Scarborough (W.); Bridlington (F.W.M.).*subteres* Brady—Bridlington (F.W.M.).**BOLIVINA** d'Orbigny*robusta* Brady—Bridlington (F.W.M.).*textularioides* Reuss—Bridlington (F.W.M.).*pseudo-plicata* Her.-All. & Earl.—Bridlington (F.W.M.).**CASSIDULINA** d'Orbigny*laevigata* d'Orb.—Bridlington (F.W.M.).

Family LAGENIDAE

LAGENA Walker & Boys*clavata* d'Orb.—Scarborough (W.B.).*globosa* (Montagu)—Scarborough (W.B.).*laevigata* (Reuss)—Bridlington (F.W.M.).*laevis* (Montagu)—Scarborough (W.B.).*lucida* (Will.)—Scarborough (W.B.); Bridlington (F.W.M.).*marginata* (Walk. & Boys)—Scarborough (W.B.).*orbignyana* Seg.—Bridlington (F.W.M.).*squamosa* (Montagu)—Scarborough (W.B.); Bridlington (F.W.M.).*melo* (d'Orb.)—Bridlington (F.W.M.).*sulcata* var. *interrupta* Will.—Scarborough (W.B.); Bridlington (F.W.M.).*williamsoni* (Alc.)—Bridlington (F.W.M.).

VAGINULINA d'Orbigny*linearis* (Montagu)—Scarborough (W.B.).**MARGINULINA** d'Orbigny*glabra* d'Orb.—Bridlington (F.W.M.).**CRISTELLARIA** Lamarck*rotulata* (Lam.)—Scarborough (W.B.).*crepidula* (Ficht. & Moll.)—Scarborough (W.B.).**POLYMORPHINA** d'Orbigny*williamsoni* Terq.—Scarborough (W.).*lanceolata* Reuss—Robin Hood's Bay (G.S.B.); Scarborough (W.).

Family ROTALIIDAE

DISCORBINA Parker & Jones*globularis* (d'Orb.)—Bridlington (F.W.M.).*rosacea* (d'Orb.)—Bridlington (F.W.M.).*wrightii* (Brady)—Bridlington (F.W.M.).**PLANORBULINA** d'Orbigny*mediterraneensis* d'Orb.—Scarborough (G.J.); Bridlington (F.W.M.).**TRUNCATULINA** d'Orbigny*lobatula* (Walk. & Jac.)—Bridlington (F.W.M.).**PULVINULINA** Parker & Jones*repanda* (Ficht. & Moll.)—Scarborough (W.B.).var. *concamerata* (Montagu)—Bridlington (F.W.M.).**ROTALIA** Lamarck*beccarii* (L.)—Bridlington (F.W.M.).

Family NUMMULINIDAE

NONIONINA d'Orbigny*depressula* (Walk. & Jac.)—Bridlington (F.W.M.).*scapha* (Ficht. & Moll.)—Bridlington (F.W.M.).*umbilicatus* (Montagu)—Scarborough (W.B.).**POLYSTOMELLA** Lamarck*crispa* (L.)—Bridlington (F.W.M.).*striato-punctata* (Ficht. & Moll.)—Bridlington (F.W.M.).**OPERCULINA** d'Orbigny*ammonoides* Gron.—Scarborough (W.B.).

Class CILIOPHORA

Order SPIROTRICHA

Sub-order HETEROTRICHA

Family TINTINNIDAE

PTYCHOCYLIS Brandt*urnula* Clap. & Lach.—Flamborough, 20 fm. (V.H.Y.).**EPIPLOCYLIS** Kofoed & Campbell*acuminata* (v. Dad)—Flamborough, 20 fm. (V.H.Y.).**TINTINNOPSIS** Stein*beroidea* Stein—Flamborough, very rare, 20 fm. (V.H.Y.).

Phylum PORIFERA — SPONGES

Order CALCAREA

Family HOMOCOELIDAE

LEUCOSOLENIA Bowerbank

botryoides (Ell. & Sol.)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.B.); Cornelian Bay (J.I.); Filey, May, 1913 (F.H.W.).

coriacea (Montagu)—Robin Hood's Bay, Sept., 1937 (N.B.E.); Scarborough (W.B.).

Family SYCETTIDAE

SYCON Risso

ciliatum (Fab.)—Robin Hood's Bay, Cornelian Bay, Sept., 1919 (J.I.); Filey, May, 1913 (F.H.W.).

Family GRANTIIDAE

GRANTIA Fleming

compressa (Fab.)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, between tide marks, under stones and on weed, Feb., 1905 (J.H.H.); Filey, May, 1913 (F.H.W.).

LEUCONIA Grant

nivea (Grant)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.B.).

Order TETRAXONIDA

Sub-Order HOMOSCLEROPHORA

Family PLAKINIDAE

OSCARELLA Vosmaer

lobularis (Schmidt)—Cornelian Bay, 1919 (J.I.).

Sub-Order ASTROTETRAXONIDA

Family TETILLIDAE

TETILLA Schmidt

cranium (Muell.)—Hayburn Wyke, 1891 (J.P.A.D.).

Sub-Order SIGMATOSCLEROPHORA

Family HAPLOSCLERIDAE

HALICLONA Bowerbank

limbata (Montagu)—Robin Hood's Bay (N.B.E.); Scarborough (W.B.).

oculata (Pall.)—In deep water, N. of Scarborough, 1926 (J.H.H., W.B.); Filey Brigg, Aug., 1920 (A.I.B.).

ADOCIA Gray

cinerea (Grant)—Scarborough (W.B.).

Family DESMACIDONIDAE

AMPHILECTUS Vosmaer

fucorum (Esp.)—Scarborough (W.B.).

MYXILLA Schmidt*incrustans* (Johnst.)—Scarborough (W.B.).**HYMEDESMIA** Bowerbank*brondstedii* Burt.—Robin Hood's Bay (J.I.); Scarborough (W.B., J.S.B.).**OPHLITASPONGIA** Bowerbank*seriata* Bow.—Filey, March, 1922 (J.I.).

Family RASPAILIIDAE

RASPAILIA Gray*hispida* (Montagu)—Scarborough (W.B.).

Family AXINELLIDAE

HALICHONDRIA Fleming*panicea* (Pall.)—BREAD-CRUMB SPONGE. Sandsend, 1901 (M.V.L.); Whitby, 1899 (S.L.P.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, very common in rock pools on under side of rocks, low down on the beach (J.S., J.C.H.); Filey, May, 1913 (F.H.W.).*bowerbanki* Burt.—Scarborough (W.B.).**HYMENIACIDON** Bowerbank*perlevis* (Montagu)—Robin Hood's Bay, Sept., 1937 (N.B.E.).

Family CLAVULIDAE

SUBERITES Nardo*domuncula* (Olivi) (*Ficulina ficus* L.)—Known as *domuncula* when growing on shells used by hermit crabs and as *ficus* when growing alone. In deep water off Robin Hood's Bay, Hayburn Wyke and Scarborough on shells (*Dentalium*, *Astarte*, etc.) inhabited by *Eupagurus kröyeri*, 1926, 1928 (J.S.). Very common 25 miles off shore in 1928, but disappeared later in year, and again in 1929 (J.S.); Flamborough at 20 fm., usually grows to a size that makes its base on the shell look absurdly small. The shell is sometimes embedded (M.B.A.).**POLYMASTIA** Bowerbank*boletiforme* (Lam.)—Scarborough, usually in deep water, often brought in by trawlers and crabbing boats (J.S.).*mammillaris* (Muell.)—Scarborough (R.H., W.B.).**PSEUDOSUBERITES** Topsent*sulphureus* Bow.—Scarborough, the type specimen caused the stone it coated to appear as if it had been washed over with a thick infusion of milk of sulphur (J.S.B.).

Order EUCERATOSA

Family SPONGIIDAE

DYSIDEA Johnston*fragilis* (Montagu)—Robin Hood's Bay, Sept., 1937 (N.B.E.).**HALISARCA** Dujardin*dujardinii* Johnst.—Robin Hood's Bay, Scarborough, 1910 (J.I.).

Phylum COELENTERATA

Class HYDROZOA

Order ATHECATA (ANTHOMEDUSA)

Family TUBULARIIDAE

TUBULARIA Linnaeus

indivisa L.—Robin Hood's Bay (J.C.H.); Scarborough, fine specimens taken in large quantities by trawlers off the coast (J.S.); Filey Brigg, May, 1903 (T.P.); Bridlington Bay and Flamborough, 20 fm. (M.B.A.).

larynx Ell. & Sol.—Common in deep water off Whitby and Robin Hood's Bay (J.S.); Scarborough, 1910 (J.I.); Flamborough, 20 fm. (M.B.A.).

attenuata Allm.—Filey, 1897, on **Flustra** and **Sertularia** (S.L.P.); Flamborough, 20 fm. (M.B.A.) (Records doubtful).

Family CORYNIDAE

CORYNE Gaertner

sarsii Lov.—Filey (T.H.); Bridlington Bay (M.B.A.).

SARSIA Lesson

eximia (Allm.)—Whitby, 1868 (T.H.); Robin Hood's Bay, Scarborough (J.I.); Filey, 1903 (T.P.).

ACTIGIA Stechow

pusillum (van Ben.)—Whitby, 1899, on **Hydrallmania** and **Laminaria** (T.P.); Robin Hood's Bay, Scarborough (J.C.H.); Filey in shrimp nets, May, 1903 (T.P.).

Family ELEUTHERIIDAE

ELEUTHERIA Quatrefages

dichotoma L.—Whitby, Filey Brigg (T.H.).

Family CLAVIDAE

CLAVA Gmelin

multicornis (Forsk.)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.); Filey Brigg, May, 1903 (T.P.).

Family HYDRACTINIDAE

HYDRACTINIA van Beneden

echinata (Flem.)—Robin Hood's Bay (J.H.H.); Scarborough, almost always on shells (**Buccinum**, **Natica**, etc.) inhabited by **Eupagurus bernhardus**, but occurs on other objects, e.g., drift wood (T.P.).

PODOCORYNE Sars, M.

carnea Sars, M.—On fragments of shell off Flamborough (M.B.A.).

Family BOUGAINVILLIDAE

BIMERIA Wright, T. S.

vestita (Wright, T. S.)—Whitby (T.H.).

ASELOMARIS Berrill

arenosa (Ald.)—Filey Brigg on undersides of stones and **Laminaria** roots (T.H.).

Family PANDEIDAE

AMPHINEMA Haeckel

dinema Per. & Les. (= *Perigonimus serpens*)—Filey Brigg (T.H.).

Family EUDENDRIIDAE

EUDENDRIUM Ehrenberg

rameum (Pall.)—Off Whitby and Robin Hood's Bay (J.S.).

ramosum (L.)—Whitby, 20 fm. (M.B.A.); found with *E. rameum*, but more common (J.S.).

Order THECATA

Family HALECIIDAE

HALECIUM Oken

muricatum (Ell. & Sol.)—Scarborough (W.B.).

beani (Johnst.)—Whitby, 20-30 fm. (M.B.A.); Scarborough (W.B.).

tenellum (Hincks)—Filey (T.H.).

halecium L.—Not rare off coast (J.S.).

Family LAFOEIDAE

LAFOEA Lamouroux

dumosa (Flem.)—Not rare; in shallow water (J.S.); Filey Brigg, May, 1903 (T.P.); Gonosome as *Copina arcta* Dal., on *Hydrallmania falcata*, Whitby, 10-20 fm. (M.B.A.); Filey Brigg, May, 1903 (T.P.).

Family CAMPANULINIDAE

CAMPANULARIA Lamarck

verticillata L.—Whitby (M.B.A.); Flamborough, 30 fm. (V.H.Y.); occasionally brought up by trawlers (J.S.).

volutilis L.—Scarborough, rare on *Diphasia tamarisci* (W.B.); Filey, May, 1903, in shrimp nets (T.P.).

CLYTIA Lamouroux

johnstoni (Ald.)—Robin Hood's Bay, March, 1897, on sponge, Scarborough (J.C.H.); Bridlington (V.H.Y.).

OBELIA Péron & Lesueur

dichotoma (L.)—Robin Hood's Bay under large stones at L.W. mark, Scarborough (J.C.H.).

geniculata (L.)—Whitby, 1899, on *Flustra*, *Laminaria* and *Maugeria* in quantity, 1903 (S.L.P.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, common in rock pools (J.S.); Filey, 1897, common on *Sertularia*, *Flustra* and *Laminaria* (T.P.).

longissima (Pall.)—Filey, May, 1903 (T.P.).

GONOTHYRAEA Allman

loveni (Allm.)—Filey, May, 1903 (T.P.).

LAOMEDEA Lamouroux

gelatinosa Pall.—Robin Hood's Bay, Scarborough (J.C.H.); Filey Brigg, May, 1903 (T.P.).

flexuosa Hincks—Robin Hood's Bay, Scarborough (J.I.); Filey Brigg, May, 1903 (T.P.).

OPERCULARELLA Hincks

lacerata (Johnst.)—Filey Brigg, May, 1903 (T.P.).

CUSPIDELLA Hincks

humilis Hincks—Whitby (T.H.) (doubtful record).

costata Hincks—Whitby, on *Syncoryne eximia* (T.H.) (doubtful record).

CALYCELLA Allman

syringa L.—Flamborough, 30 fm. (V.H.Y.).

Family SERTULARIIDAE

DIPHASIA Agassiz, L.

attenuata (Hincks)—Whitby (T.H.), Filey, 1897, on **Flustra** and **Sertularia abietina** (S.L.P.).

rosacea L.—Scarborough, very common off coast generally attached to **Tubularia indivisa** (J.S.); Bridlington Bay (M.B.A.).

tamarisca (L.)—Scarborough, common in deep water (J.S.).

fallax (Johnst.)—Common off Whitby and Robin Hood's Bay (J.S.); Scarborough (W.B.); Filey, abundant (T.H.).

pinnata (Pall.)—Whitby, 20 fm. (M.B.A.).

DYNAMENA Lamouroux

pumila (L.)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.C.H.); Filey, uncommon on **Flustra**, common on **Hydrallmania**, 1900 (S.L.P.).

SERTULARELLA Gray

polyzonias (L.)—Off Whitby (P.); Scarborough, very rare (W.B.); off Flamborough (M.B.A.).

rugosa Gray—Filey Brigg, May, 1903 (T.P.).

tenella Ald.—Filey (T.H.).

ABIETINARIA Kirchenpauer

abietina (L.)—Robin Hood's Bay, Scarborough, Oct., 1904 (J.H.H.); Filey, in quantity among tidal refuse, 1910 (S.L.P.).

HYDRALLMANIA Hincks

falcata (L.)—Whitby, 1899, common (S.L.P.); Robin Hood's Bay (L.W.); Scarborough (J.I.); Filey, 1897 (S.L.P.); the commonest hydrozoan in the district from just below L.W. mark to many miles out to sea; trawlers bring up vast quantities (J.S.).

SERTULARIA Linnaeus

operculata (L.)—Whitby, 1899, on root of **Laminaria** (S.L.P.); Robin Hood's Bay (L.W.); near Scarborough on **Ahnfeltia plicata**, 1901, Filey, 1897, on **Flustra** (S.L.P.); Bridlington Bay (M.B.A.). Not rare in deep water and sometimes washed up after an easterly wind (J.S.).

filicula Ell. & Sol.—Hayburn Wyke, 1891 (J.P.A.D.); Scarborough (J.E. & D.S.); Filey, plentiful (T.Pen.); common in deep water, often washed up after storm (J.S.).

cupressina (L.)—Fine specimens constantly brought up by trawlers off Whitby, Robin Hood's Bay and Scarborough (J.S.); Filey, 1897 (S.L.P.).

fusca Johnst.—Scarborough (W.B.); Filey (T.H.).

gracilis Hass.—Whitby, 1899, on *Hydrallmania* and *Sertularia* (S.L.P.); Robin Hood's Bay (L.W.).

THUJARIA Fleming

articulata (Pall.)—Scarborough, not common in deep water (J.S.); Bridlington Bay (M.B.A.).

thuja L.—BOTTLE-BRUSH. Robin Hood's Bay (J.H.H.); Scarborough (J.S.); Filey, 1897 (S.L.P.).

Family PLUMULARIIDAE

KIRCHENPAUERIA Jickeli

pinnata (L.)—Robin Hood's Bay (J.S.); Scarborough (W.B.); Filey, 1919 (S.L.P.); Bridlington Bay (M.B.A.).

PLUMULARIA Lamarck

setacea (Ell. & Sol.)—Robin Hood's Bay, Cornelian Bay (J.I.); Filey, May, 1913 (F.H.W.).

SCHIZOTRICHA Allman

frutescens (Ell. & Sol.)—Off Whitby, not uncommon in deep water (J.S.); Scarborough (J.E. & D.S.); Filey, thrown up after storms (T.H.).

NEMERTESIA Lamouroux

antennina (L.)—Whitby (W.B., T.P.); Robin Hood's Bay, Scarborough (J.I.); Filey, 1897 (S.L.P.); Bridlington (M.B.A.); common in deep water, washed up after storms (J.S.).

ramosa (Lamour.)—Off Whitby (P.); Robin Hood's Bay (L.W.); common in deep water and often washed up after gales (J.S.).

Family AGLAOPHENIIDAE

AGLAOPHENIA Lamouroux

pluma (L.)—Filey (T.H.).

Sub-class HYDROMEDUSAE

Order ANTHOMEDUSAE

Family CORYMORPHIDAE

EUPHYSA Forbes

aurata Forbes—Robin Hood's Bay, June, 1922 (E.P.).

Family CORYNIDAE

SARSIA Lesson

tubulosa (Sars, M.)—Robin Hood's Bay, Aug., 1922 (E.P.).

eximia (Allm.)—Robin Hood's Bay, Scarborough (J.I.); Filey, 1903 (T.P.).

Family HYDRACTINIDAE

PODOCORYNE Sars., M.

carnea (Sars, M.)—Robin Hood's Bay, June, 1922 (E.P.).

Order LEPTOMEDUSAE

Family LAODICIDAE

LAODICEA Lesson

undulata (Forbes & Goods.)—Robin Hood's Bay, June, 1922 (E.P.).

Family MITROCOMIDAE

TIAROPSIS Agassiz, L.**multicirrata** (Sars, M.)—Robin Hood's Bay, Aug., 1922 (E.P.).

Family CAMPANULARIDAE

PHIALIDIUM Leuckart**hemisphericum** (L.)—Robin Hood's Bay, Aug., 1922 (E.P.).

Family PHIALELLIDAE

PHIALELLA Browne**quadrata** (Forbes)—Robin Hood's Bay, Aug., 1922 (E.P.).

Family EUTIMIDAE

EUTIMA McGrady**gracilis** (Forbes & Goods.)—Robin Hood's Bay, Aug., 1922 (E.P.).

Family AEQUORIIDAE

AEQUOREA Péron & Lesueur

sp.—Scarborough (O.G.).

Order TRACHYMEDUSAE

Family RHOPALONEMATIDAE

AGLANTHA Haeckel**digitale** (Muell., O. F.) var. **rosea** (Forbes)—Whitby, 20 fm. (V.H.Y.); Robin Hood's Bay, June, 1922 (E.P.); Flamborough, 20 fm. (V.H.Y.).

Class SCYPHOMEDUSAE

Order STAUROMEDUSAE

Family LUCERNARIIDAE

LUCERNARIA Mueller, O. F.**campanulata** Lamour.—Robin Hood's Bay; Scarborough, abundant in May, 1913 and 1914, re-appeared in same locality Oct., 1923, and again Oct., 1925 (J.I.).**HALICLYSTUS** Clark**octoradiatus** Clark—Robin Hood's Bay, Aug., 1913 (J.I.); Scarborough, July, 1913, and 1922 (A.I.B.).

Order SEMAEOSTOMEAE

Family AURELIIDAE

AURELIA Lamarck**aurita** (L.)—Robin Hood's Bay, Scarborough, on **Scyphistomas**, Sept., 1925, Filey, Sept., 1913 (J.I.).

Class ANTHOZOA

Sub-class ALCYONARIA

Order ALCYONACEA

SARCODICTYON Forbes**catenata** Forbes—Whitby, 10-20 fm. (M.B.A.).

Family ALCYONIDAE

ALCYONIUM Linnaeus

digitatum L.—“DEAD MEN’S FINGERS”, “COW-PAPS”, Whitby, Sept., 1914 (F.H.W.); Robin Hood’s Bay (J.I.); Scarborough, 1894 (O.G., J.C.H.); Filey, May, 1913 (F.H.W.); common in deep water (J.S.).

palmatum Pall.—Robin Hood’s Bay (J.I.).

Order PENNATULACEA

Family VIRGULARIIDAE

VIRGULARIA Lamarck

mirabilis Lam. var. *sessifolia*—Bridlington, 30 fm. (V.H.Y.).

BALTICINA Gray

finmarchica Gray—Several specimens trawled 120 miles N.E. of Scarborough, Apl., 1931, and sent to the British Museum, were reported new to British waters (W.J.C.).

Family PENNATULIDAE

PENNATULA Linnaeus

phosphorea L.—Off Scarborough, Aug., 1928 (J.S.).

Sub-class CERIANTHARIA

Family CERIANTHIDAE

CERIANTHUS Chiaje

sp.—Scarborough, 10 fm. (M.B.A.).

Sub-class ACTINIARIA

Family ACTINIIDAE

ACTINIA Browne

equina L.—Whitby, Sept., 1914 (F.H.W.); Robin Hood’s Bay (J.C.H.); Scarborough, 1894 (O.G.); Filey, May, 1903 (T.P.).

TEALIA Gosse

felina (L.) var. *coriacea*—Common all along coast. Whitby, 20 fm. (M.B.A.); Robin Hood’s Bay, Oct., 1912 (F.H.W.); Scarborough, locally known as “Scar-doodles” and used for bait, 1894 (O.G.); Filey Brigg, May, 1903 (T.P.).

var. *lofotensis*—Common in the trawl; old shells for attachment generally (J.S.); Filey, 1904 (J.).

Family METRIDIIDAE

METRIDIDIUM Oken

senile (L.) var. *dianthus*—Whitby, Sept., 1914 (F.H.W.); Robin Hood’s Bay, Oct., 1912, Sept., 1922 (F.H.W., A.I.B.); Scarborough, May, 1907, Sept., 1922 (J.I., A.I.B.); Filey, May, 1913 (F.H.W.).

CALLIACTIS Verrill

parasitica (Couch)—Scarborough, on shells (J.S.).

HORMATHIA Gosse

digitata (Muell., O. F.)—Scarborough, Sept., 1922 (A.I.B.).

Family SAGARTIIDAE

SAGARTIA Gosse

elegans (Dalyell) var. *miniata*—Robin Hood's Bay, Aug., 1910 (J.I.); Filey, common (J.I.).

var. *venusta*—Cornelian Bay, June, 1907 (J.I.); Filey, May, 1914 (F.H.W.).

var. *nivea*—Scarborough, Nov., 1908 (J.I.).

troglodytes (Price)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1903 (J.H.H.); and var. *ornata*. 1922 (A.I.B.); Filey, May, 1913 (F. H. W.).

anguicoma (Price)—Whitby, 20 fm. (M.B.A.).

CEREUS Oken

pedunculatus (Penn.)—Robin Hood's Bay (L.W.).

Class CTENOPHORA

BOLINOPSIS Agassiz, L.

infundibulum (Muell., O.F.)—Robin Hood's Bay, 1913 (J.C.H.); Scarborough, 1894 (O.G.); Flamborough, 20 fm. (M.B.A.).

BEROE Browne

ovatus Bosc.—Robin Hood's Bay, common during first half of 1928 (J.S.).

Phylum PLATYHELMINTHES—FLATWORMS

Class TURBELLARIA

Order POLYCLADIDA

Family LEPTOPLANIDAE

LEPTOPLANA Ehrenberg

tremellaris (Muell., O.F.)—Scarborough (J.I.).

Family PSEUDOCERIDAE

THYSANOZOOM Grube

brocchii (Risso)—Scarborough, June, 1922.

Family EURYLEPTIDAE

CYCLOPORUS Lang

papillosus (Sars in Jens.)—On *Botryllus*, Robin Hood's Bay, Aug., 1922, Scarborough, Aug., 1928 (J.S.).

Class TREMATODA

CERCARIA

purpureae Lebour, Larva of *Perorchis acanthus* Nicoll—Robin Hood's Bay.

Class CESTODA

BOTHRIOCEPHALUS Rudolphi

scorpio (Muell., O. F.)—Robin Hood's Bay from *Cottus scorpio*, 1938 (Lab.).

Phylum NEMERTINEA

Class ANOPLA

Order PALEONEMERTEA

Family TUBULANIDAE

TUBULANUS Renier*annulatus* (Mont.)—Scarborough (A.T.W.).*superbus* (Koell)—Robin Hood's Bay (Lab.).**LINEUS** Sowerby*longissimus* (Gunn.)—BOOTLACE-WORM. Robin Hood's Bay (W.J.C.). About 5ft. of worm secured but remainder hidden in rock at Cloughton Wyke, Oct., 1937 (W.J.C.); Filey Brigg, May, 1903 (T.P.).*gesserensis* (Muell., O. F.)—Scarborough (J.I.); Filey, May, 1903 (T.P.).*ruber* (Muell., O. F.)—Robin Hood's Bay (Lab.).**EUBORLASIA** Vaillant*elizabethae* (McInt.)—Robin Hood's Bay, Scarborough, Sept., 1919 (A.J.B.).

Class ENOPLA

Order HOPLONEMERTEA

Family EMPLECTONEMATIDAE

EMPLECTONEMA Stimpson*neesi* (Oerst.)—Robin Hood's Bay., Oct., 1912 (F.H.W.); Scarborough (J.I.).*gracile* (Johnst.)—Robin Hood's Bay (Lab.); Filey, Sept., 1913 (J.I.).

Family PROSORHOCHMIDAE

OERSTEDIA Quatrefages*dorsalis* (Abild.)—Scarborough, 1913 (J.I.).

Family AMPHIPORIDAE

AMPHIPORUS Ehrenberg*lactifloreus* (Johnst.)—Robin Hood's Bay (Lab.); Scarborough (J.I.); Filey Brigg, May, 1903 (T.P.).*pulcher* (Johnst.)—Scarborough, Aug., 1923 (J.I.).

Family TETRASTEMMATIDAE

TETRASTEMMA Ehrenberg*melanocephalum* (Johnst.)—Robin Hood's Bay, Scarborough (J.I.).*vermiculus* (Quatref.)—Scarborough (J.I.).*candidum* (Muell., O.F.)—Scarborough (J.I.).

Phylum ANNELIDA—RINGED WORMS

Class POLYCHAETA—MARINE BRISTLE WORMS

ERRANTIA

Family APHRODITIDAE

APHRODITA Linnaeus

aculeata L.—SEA MOUSE. Scarborough (J.C.H.).

LEPIDONOTUS Leach

squamatus (L.)—Common; Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I. & A.T.W.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.).

clava (Montagu)—Robin Hood's Bay (Lab.); Filey, Sept., 1913 (J.I.).

HARMOTHOE Kinberg

imbricata (L.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (W.J.C.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.).

impar Johnst.—Whitby, 20 fm. (M.B.A.); Scarborough (J.I.); Filey, May, 1913 (F.H.W.).

SCALISETOSUS McIntosh

pellucidus (Ehlers)—Whitby, 20 fm. (M.B.A.).

assimilis (McInt.)—Robin Hood's Bay (Lab.).

LAGISCA Malmgren

extenuata (Grube)—Whitby, Sept., 1914 (F.H.W.); Scarborough (J.I.); Filey, May, 1913 (F.H.W.).

POLYNOË Savigny

scolopendrina (Sav.)—Robin Hood's Bay (Lab.).

HALOSYDNA Kinberg

gelatinosa Sars, M.—Robin Hood's Bay (Lab.).

STHENELAIS Kinberg

boa (Johnst.)—Robin Hood's Bay (L.W.); Filey Brigg, May, 1903 (T.P.).

limicola (Ehlers)—Flamborough, 20 fm. (M.B.A.).

SIGALION Cuvier

mathildae Aud. & M.-Edw.—Flamborough, 20 fm. (M.B.A.).

Family AMPHINOMIDAE

SPINTHER Johnston

miniaceus Grube—Robin Hood's Bay, Aug., 1922 (E.P.).

Family PHYLLODOCIDAE

PHYLLODOCE Savigny

laminosa Sav.—Robin Hood's Bay (Lab.).

lamelligera Johnst.—Robin Hood's Bay, Cornelian Bay, 1922 (J.I.); Filey, 1928 (J.S.).

maculata (L.)—Robin Hood's Bay (L.W.); Scarborough harbour, April, 1920.

paretti (Blainv.)—Robin Hood's Bay (L.W.).

EULALIA Savigny*sanguinea* (Oerst.)—Scarborough (J.I.).*viridis* (Muell., O. F.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I.); Scarborough (A.T.W.); Filey, May, 1913 (F.H.W.).*bilineata* Johnst.—Scarborough (J.I.).*punctifera* Grube—Scarborough (J.I.).**ETEONE** Savigny*depressa* (Malm.) (= *flava* (Fabr.))—Scarborough, Oct., 1911, not hitherto found in British waters (McIntosh, Mon. Brit. Annelids, 1922-23, IV, 428. Ann. & Mag. Nat. Hist., July, 1912, Nat., (1912); Scarborough harbour, April & Sept., 1920 (A.I.B.).

Family TOMOPTERIDAE

TOMOPTERIS Eschscholtz*heligolandica* Greef.—Bridlington, 20 fm. (V.H.Y.).*onisciformis* Eschs.—Flamborough, 30 fm. (V.H.Y.).

Family HESIONIDAE

KEFERSTEINIA Quatrefages*cirrata* (Kef.)—Scarborough (J.I.).**CASTALIA** Savigny*punctata* (Muell., O. F.)—Scarborough (J.I.).

Family SYLLIDAE

SYLLIS Savigny*gracilis* Grube—Scarborough (J.I.).*armillaris* Malm. — Scarborough (A.T.W.); Filey, May, 1913 (F.H.W.).*prolifera* Krohn.—Scarborough, Aug., 1923 (J.I.).**TRYPANOSYLLIS** Langerhans*zebra* Grube—Scarborough (J.I.).**AUTOLYTUS** Grube*pictus* (Ehlers)—Scarborough, with nurse stock (J.I.).*prolifera* (Muell., O. F.)—Scarborough (J.I.).

Family NEREIDAE

NEREIS Linnaeus—RAGWORMS*pelagica* L.—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Scarborough (J.H.H.); Filey Brigg, May, 1903 (T.P.).*virens* Sars—Robin Hood's Bay, 1948 (Lab.).*diversicolor* (Muell., O. F.) Scarborough, Sept., 1911 (F.H.W.); April, 1920 (J.I.).*fucata* (Sav.)—Robin Hood's Bay (Lab.); Scarborough (J.H.); Filey Brigg, March, 1903 (T.P.). Not uncommon in deep water in shells occupied by hermit crabs.**PERINEREIS** Kinberg*cultrifera* (Grube)—Locally male *heteronereis* called "THIRSK". Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (A.T.W.); Filey, May, 1913 (F.H.W.).

PLATYNEREIS Kinberg*dumerilii* (Aud. & M.-Edw.)—Robin Hood's Bay, 1939 (Lab.).

Family NEPHTHYDIDAE

NEPHTHYS Cuvier*caeca* Fabr.—Robin Hood's Bay (A.T.W.); Scarborough, April, 1920 (J.I.); Filey Brigg, May, 1903 (T.P.).*homborgii* Lam.—WHITE CAT. Robin Hood's Bay, Scarborough (A.T.W.).

Family SPHAERODORIDAE

EPHESIA Rathke*gracilis* Rath.—Whitby, 20 fm. (M.B.A.).

Family GLYCERIDAE

GLYCERA Savigny*lapidium* (Quatref.)—Whitby, 20 fm. (M.B.A.); Scarborough, Oct., 1913 (J.I.); Filey Brigg (T.P.).**GONIADA** Audouin & Milne-Edwards*maculata* Oerst.—Bridlington Bay, as food of plaice and whiting (M.B.A.).**SEDENTARIA**

Family ARICIIDAE

SCOLOPLOS Blainville*armiger* (Muell., O. F.)—Scarborough, April, 1920 (J.I.).

Family SPIONIDAE

SCOLELEPIS Blainville*girardi* (Quatref.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay and Scarborough (J.I.).**NERINE** Johnston*foliosa* (Aud. & M.-Edw.)—Robin Hood's Bay (L.W.); Filey Brigg, May, 1903 (T.P.); Flamborough, 30 fm., as food of plaice (M.B.A.).*cirratus* (Del. Chi.)—Robin Hood's Bay, 1948 (Lab.).**POLYDORA** Bosc*caeca* (Oerst.)—Scarborough, 1911 (A.T.W.).*ciliata* (Johnst.)—Scarborough (A.T.W.).

Family CIRRATULIDAE

AUDOUINIA Quatrefages*tentaculata* (Mont.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.); Filey Brigg, May, 1903 (T.P.).**CIRRATULUS** Lamarck*cirratus* (Muell., O. F.)—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.).

Family CHLORHAEMIDAE

FLABELLIGERA Sars*affinis* Sars—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.).

STYLARIOIDES Delle Chiaje*plumosa* (Muell., O. F.).—Scarborough (J.I.).

Family OPHELIIDAE

OPHELIA Savigny*limacina* (Rathk.).—Filey, March, 1928, two specimens washed up by storm (J.S.); food for plaice throughout area (M.B.A.).**AMMOTRYPANE** Rathke*aulogaster* Rathk.—Bridlington, 30 fm. (V.H.Y.).

Family CAPITELLIDAE

NOTOMASTUS Sars*latericeus* Sars—Robin Hood's Bay, 1948 (Lab.).**CAPITELLA** Blainville*capitata* (Fabr.).—Robin Hood's Bay, Scarborough, Aug., 1920 (J.I.).

Family ARENICOLIDAE

ARENICOLA Lamarck*marina* (L.).—LUG-WORM. Robin Hood's Bay (J.C.H.); Scarborough (O.G. & F.H.W.); Filey Brigg, May, 1903 (T.P.).*ecaudata* Johnst.—Robin Hood's Bay, 1948 (Lab.).

Family MALDANIDAE

PROCLYMENE Arwidsson*mülleri* (Sars, M.).—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (Lab.); Scarborough, Sept., 1911 (F.H.W.); Filey (A.T.W.).

Family OWENIIDAE

OWENIA Delle Chiaje*fusiformis* Del. Chi.—Throughout off-shore area as food of plaice (M.B.A.).

Family SABELLARIIDAE

SABELLARIA Lamarck*spinulosa* Leuck.—Robin Hood's Bay (A.T.W.); Scarborough, Sept., 1911 (F.H.W.).*alveolata* (L.).—Robin Hood's Bay (L.W.); Scarborough to Withernsea, 10-20 fm. (M.B.A.).

Family AMPHICTENIDAE

PECTINARIA Lamarck*auricoma* (Muell., O. F.).—Bridlington, 30 fm. (V.H.Y.).*belgica* (Pall.).—Robin Hood's Bay (Lab.); Filey Brigg, May, 1903 (T.P.); Bridlington, 30 fm. (V.H.Y.).*koreni* (Malm.).—Fairly common throughout area, a food for nearly all species of edible fish (M.B.A.).

Family AMPHARETIDAE

AMPHARETE Malmgren*grubei* Malm.—Flamborough, 30 fm. (V.H.Y.); as food of plaice (M.B.A.).**AMPHICTEIS** Grube*gunneri* (Sars)—Flamborough, 30 fm. (V.H.Y.).

Family TEREBELLIDAE

AMPHITRITE Mueller, O. F.

gracilis Grube—Scarborough, June, 1924 (J.I.); Filey, May, 1913 (F.H.W.).

johnstoni Malm.—Robin Hood' Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); 1922 (A.I.B.).

LANICE Malmgren

conchilega (Pall.)—SAND-MASON. Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.); Flamborough, 10-30 fm. (M.B.A.).

POLYMNIA Malmgren

nebulosa (Montagu)—Robin Hood's Bay, 1948 (Lab.).

NICOLEA Malmgren

zostericola (Oerst.)—Whitby, 20-30 fm. (M.B.A.); Robin Hood's Bay.

THELEPUS Leuckart

cinnatus (Fabr.)—Whitby, 20-30 fm. (M.B.A.).

POLYCIRRUS Grube

aurantiacus Grube—Scarborough, Sept., 1911 (J.I.); Filey, May, 1913 (F.H.W.).

Family SABELLIDAE

SABELLA Linnaeus

pavonina (Sav.)—Scarborough (J.I.); tubes covered with *Alcyonium digitatum* frequent throughout the area (M.B.A.).

POTAMILLA Malmgren

reniformis (Muell., O. F.)—Scarborough (A.T.W.); Filey, May, 1933 (F.H.W.).

torelli Malm.—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.).

DASYCHONE Sars

bombyx (Daly.)—Whitby, 20 fm. (M.B.A.); Scarborough, Oct., 1912 (J.I.).

AMPHIGLENA Claparède

mediterranea (Clap.)—Scarborough, Aug., 1924 (J.I.).

FABRICIA Blainville

sabella (Ehr.)—Scarborough (A.T.W.).

MYXICOLA Koch

infundibulum (Montagu)—Scarborough, Aug., 1924 (J.I.).

Family SERPULIDAE

SERPULA Linnaeus

vermicularis L.—Exceedingly abundant along coast (J.S.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.C.H.); Scarborough, Sept., 1911 (F.H.W.).

HYDROIDES Gunnerus

norvegica Gunn.—The PUMICE-STONE SPONGE, named locally by fishermen "Ross". A piece trawled off Whitby, May, 1927, measured 6in. x 9in. x 12in. (J.S.).

POMATOCEROS Phillippi

triqueter (L.).—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.C.H.); Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1913 (F.H.W.).

FILOGRANA Oken

implexa Berk.—Scarborough (A.I.B.); Filey Brigg, 1903 (T.P.).

SPIRORBIS Daudin

borealis Daud.—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.).

Class OLIGOCHAETA

Family TUBIFICIDAE

CLITELLIO Savigny

arenarius (Muell., O. F.).—Robin Hood's Bay (L.W.).

Family ENCHYTRAEIDAE

PACHYDRILUS Claparède

semifuscus (Clap.).—Robin Hood's Bay, 1940, 40 specimens on under-side of small rocks embedded in pile of coarse sand (T.B.R.).

Class HIRUDINEA

PONTOBELLA Leach

muricata (L.).—SKATE LEECH, parasitic on common skate (**Raia batis**) and taken from the fish in Scarborough fish-market, Nov., 1923, to Feb., 1934 (W.J.C. & J.S.).

ABRANCHUS Johansson

microstomus (Joh.).—Robin Hood's Bay from skin of **Blennius pholis**, sent to British Museum (Natural History) (Lab.).

Phylum SIPUNCULOIDEA

Family SIPUNCULIDAE

PHASCOLOSOMA Leuckart

vulgare (Blainv.).—Filey Brigg, May, 1903 (T.P.).

minutum Kef.—Scarborough, Sept., 1911 (F.H.W.).

eremita Sars—Whitby, 10 fm. (M.B.A.).

PHASCOLION Thiel

sp.—Scarborough, Aug., 1920 (A.I.B.).

Phylum PRIAPULOIDEA

Family PRIAPULIDAE

PRIAPULUS Lamarck

caudatus Lam.—Scarborough, March, 1932 (W.J.C.); very rare, one previous record, Leckenby, 1854.

Phylum ARTHROPODA

Class CRUSTACEA

Sub-Class OSTRACODA

Sub-Order PODOCOPA

Family CYPRACEA

ILYOCYPRIS Brady & Norman

biplicata (Koch)—Filey, a single specimen; a freshwater form presumably washed into the sea down a stream.

Family CYTHERACEA

CYTHERIDEA Jones

elongata Brady—Scarborough, not common off Yorkshire coast.

papillosa Bosq.—Off Scarborough (L.).

EUCYTHERE Brady

declivis (Norm.)—Scarborough, Cayton.

KRITHE, Brady, Crosskey & Robertson

bartonensis (Jones)—Off Scarborough (L.).

CYTHERE Mueller, O. F.

lutea (Muell., O. F.)—Robin Hood's Bay, Scarborough, Cayton, Gristhorpe, Filey—widespread and sometimes abundant.

albomaculata Baird—Filey Brigg (V.H.Y.), common.

pulchella Brady—Filey Brigg (V.H.Y.).

HIRSCHMANNIA Elofson

viridis (Muell., O. F.)—Gristhorpe.

LEPTOCYTHERE Sars

confusa (Brady & Norm.) (= *pellucida* Sars)—Robin Hood's Bay, Scarborough, Cayton, Gristhorpe, Filey, Speeton.

XENOCYTHERE Sars

cuneiformis (Brady)—Scarborough, Cayton, Gristhorpe.

HEMICYTHERE Sars

villosa (Sars)—Robin Hood's Bay, Scarborough, Cayton, Gristhorpe, Filey—abundant.

convexa (Baird)—Gristhorpe.

angulata (Sars)—Scarborough (G.S.B.).

CYTHEREIS Jones

dunelmensis (Norm.)—Off Scarborough (L.).

CYTHERIDEIS Jones

subulata Brady—Cayton, Gristhorpe.

EUCYTHERURA Mueller, G. W.—Two undetermined species from Cayton.**CYTHERURA** Sars

clathrata Sars—Scarborough.

undata Sars—Robin Hood's Bay, Scarborough, Cayton.

cellulosa (Norm.)—Robin Hood's Bay.

concentrica Brady, Crossk. & Rob.—Robin Hood's Bay (V.H.Y.).

LOXOCOONCHA Sars*guttata* (Norm.)—Scarborough.*tamarindus* (Jones)—Robin Hood's Bay, Scarborough, Cayton, Gristhorpe, Filey, Speeton—abundant.*robertsoni* (Brady)—Scarborough, Cayton, Gristhorpe, Filey, Speeton—abundant.**CYTHOPTERON** Sars*nodosum* Brady—Scarborough, Cayton, Gristhorpe, Filey, Speeton—abundant.*latissimum* (Norm.)—Scarborough, Cayton, Gristhorpe, Filey.**BYTHOCYTHERE** Sars*constricta* Sars—Scarborough, Cayton, Filey.**PSEUDOCYTHERE** Sars*caudata* Sars—Red Cliff, 30 fm. (V.H.Y.).**XESTOLEBERIS** Sars*depressa* Sars—Robin Hood's Bay.*aurantia* (Baird)—Robin Hood's Bay, Filey Brigg (V.H.Y.).**TRACHYLEBERIS** Brady*angulata* (Sars)—Scarborough, Filey.*crenulata* (Sars)—Gristhorpe.**PARACYTHEROIS** Mueller, G. W.—An undetermined species not uncommon at Scarborough, Gristhorpe and Speeton.**PARADOXOSTOMA** Fischer*normani* Brady—Robin Hood's Bay, 30 fm. (V.H.Y.), Scarborough, Gristhorpe, Filey.*bradyi* Sars (= *obliquum* Brady)—Robin Hood's Bay.*hibernicum* Brady—Filey Brigg (V.H.Y.).

Sub-Class COPEPODA

Order EUCOPEPODA

Sub-Order CALANOIDA

Family CENTROPAGIDAE

ISIAS Boeck*clavipes* Boeck—Robin Hood's Bay, 35 fm. (V.H.Y.).

Family TEMORIDAE

TEMORA Baird*longicornis* (Muell., O. F.)—Filey Brigg, tidal pools (V.H.Y.).

Family PONTELLIDAE

ANOMALOCERCA Templeton*patersoni* Templ.—Off Yorkshire coast (V.H.Y.).

Family PARAPONTELLIDAE

PARAPONTELLA Brady*brevicornis* (Lubb.)—Bridlington Bay (V.H.Y.).

Sub-Order HARPACTICOIDA

Family HARPACTICIDAE

HARPACTICUS Dana*chelifer* (Muell., O. F.)—Filey Brigg, tidal pools (V.H.Y.).**ZAUS***spinatus* Goods.—Filey Brigg, tidal pools (V.H.Y.).*goodsiri* Brady—Robin Hood's Bay, 35 fm., Bridlington Bay, tow-netted (V.H.Y.).

Family TISBIIDAE

TISBE Lilljeborg*furcata* (Baird)—Filey Brigg, tidal pools (V.H.Y.).

Family TEGASTIDAE

AMYMONE Claus*sphaerica* Claus—Robin Hood's Bay, 35 fm., Red Cliff (V.H.Y.).

Family THALESTRIDAE

THALESTRIS Claus*longimana* Claus—Off Scarborough (V.H.Y.).**RHYNCHOTHALESTRIS** Sars*rufocincta* (Norm.)—Red Cliff; 35 fm. (V.H.Y.).**DACTYLOPODIA** Lang*neglecta* (Sars)—Off Robin Hood's Bay, Filey Brigg, tidal pools (V.H.Y.).**AMPHIARCUS** Sars*tenuiremis* (Brady & Rob.)—Robin Hood's Bay, 30-35 fm. (V.H.Y.).**AMPHIASCOPSIS** Gurney*thalestroides* (Sars)—Off Red Cliff (V.H.Y.).

Family DIOSACCIDAE

STENHALIA Boeck*longicaudata* Boeck—Robin Hood's Bay, 25-35 fm. (V.H.Y.).**BULBAMPHIASCUS** Lang*imus* (Brady)—Robin Hood's Bay, 25-35 fm. (V.H.Y.).

Family LAOPHONTIDAE

HETEROLAOPHONTE Lang*strömi* (Baird)—Filey Brigg, tidal pools (V.H.Y.).**LAOPHONTE** Philippi*thoracica* Boeck—Robin Hood's Bay, 10-35 fm. (V.H.Y.).

Family CLETODIDAE

RHIZOTHRIX Brady & Robertson*curvata* Brady & Rob.—Off Robin Hood's Bay (V.H.Y.).

Family TACHIDIIDAE

DANIELSSENIA Boeck*fusiformis* (Brady & Rob.)—Red Cliff, 35 fm. (V.H.Y.).

Sub-Order CYCLOPOIDA

Family OITHONIDAE

OITHONA Baird*similis* Claus—Off Whitby and Bridlington (V.H.Y.).

Family CYCLOPIDAE

HALICYCLOPS Norman*christianensis* Boeck—Filey Brigg, tidal pools (V.H.Y.).

Family ASCOMYZONTIDAE

DERMATOMYZON Claus*nigripes* Brady—Off Robin Hood's Bay and Scarborough.**COLLOCHERES** Canu*gracilicauda* (Brady)—Robin Hood's Bay, 13 fm. (V.H.Y.).**ACONTIOPHORUS** Brady*scutatus* (Brady & Rob.)—Robin Hood's Bay, 35 fm. (V.H.Y.).*ornatus* Brady & Rob.—Robin Hood's Bay (V.H.Y.); Scarborough.

Family DYSPONTIIDAE

DYSPONTIUS Thorell*striatus* Thor.—Robin Hood's Bay, 35 fm. (V.H.Y.).

Family LICHOMOLGIDAE

LICHOMOLGUS Thorell*fucicolum* Brady—Robin Hood's Bay, Scarborough, 35 fm. (V.H.Y.).*thorelli* Brady & Rob.—Robin Hood's Bay, 35 fm. (V.H.Y.).**HERMANNELLA** Canu*arenicola* (Brady)—Robin Hood's Bay, 30 fm. (V.H.Y.).**PSEUDANTHESSIUS** Claus*liber* (Brady)—Off Scarborough (V.H.Y.).

Sub-Order CALIGOIDA

Family CALIGIDAE

CALIGUS Mueller, O. F.*rapax* Milne-Edw.—Whitby on cod (V.H.Y.); Robin Hood's Bay (L.W.).*curtus* Muell., O. F.—Whitby on cod (V.H.Y.); Robin Hood's Bay (L.W.).*diaphanus* Nordm.—Robin Hood's Bay (L.W.).**LEPEOPHTHEIRUS** Nordmann*salmonis* (Kroey.)—Whitby on salmon (V.H.Y.).

Sub-Order LERNAEOIDA

Family LERNAEIDAE

LERNAEOCERA Blainville*branchialis* L.—Robin Hood's Bay (L.W.).

Family LERNAEOPODIDAE

CLAVELLA Oken*uncinata* Cuv.—Robin Hood's Bay (L.W.).

Sub-Class CIRRIPIEDIA

Order THORACICA

Family SCALPELLIDAE

SCALPELLUM Leach

scalpellum (L.)—Scarborough, local in deep water, generally attached to **Tubularia** or **Hydrallmania**—sent to British Museum for identification, 1928 (J.S.).

Family LEPADIDAE

LEPAS Linnaeus

anatifera (L.)—GOOSE BARNACLE. Robin Hood's Bay (J.C.H.); Scarborough, autumn 1894 was remarkable for the quantities of ship and goose barnacles that were washed up in great masses attached to all manner of flotsam and jetsam (wood, cork, etc.) (O.G.).

Family VERRUCIDAE

VERRUCA Schumacher

stroemia (Muell., O. F.)—Robin Hood's Bay.

Family CHTHAMALIDAE

CHTHAMALUS Ranzani

stellatus (Poli)—Filey, May, 1903 (T.P.).

Family BALANIDAE

BALANUS Da Costa

tintinnabulum (L.)—Scarborough, specimen sent to British Museum 1888 (T.D.A.C.).

porcatus Da Costa—Robin Hood's Bay (L.W.); common in deep water, growing to a good size. "Barnacle Bank" 45 mls. N.E. of Scarborough is particularly affected with them.

balanoides L.—ACORN BARNACLE. Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough, exceedingly abundant on the littoral, less abundant in deep water (J.C.H.).

Order RHIZOCEPHALA

Family PELTOGASTRIDAE

SACCULINA Thompson

carcini Thomps.—Scarborough, common on **Portunus marmoreus** in sandy bays, particularly affecting females (J.S.).

PELTGASTER Rathke

pagari Rathke—Scarborough, Sept., 1923, parasitic on **Eupagurus bernhardus** (R.S.W.).

Sub-Class MALACOSTRACA

Order CUMACEA

Family CUMIDAE

BODOTRIA Goodsir

scorpioides (Montagu)—Off Robin Hood's Bay (V.H.Y.).

Family LEUCONIDAE

EUDORELLOPSIS Sars

deformis (Kroey.)—Red Cliff, 40 fm. (V.H.Y.).

Order ISOPODA

Sub-Order FLABELLIFERA

Family AEGIDAE

AEGA Leach

psora (L.)—Scarborough (W.B.).

Family LIMNORIIDAE

LIMNORIA Leach

lignorum (Rathke)—THE GRIBBLE. Scarborough in floating wood (J.I.).

Sub-Order VALVIFERA

Family IDOTEIDAE

IDOTHEA Fabricius

baltica (Pall.)—Whitby, 1914 (F.H.W.); Robin Hood's Bay, Scarborough (J.I.); Filey (V.H.Y.); common all along the coast (J.I.).

pelagica (Leach)—Robin Hood's Bay (L.W.).

emarginata (Fabr.)—Filey (V.H.Y.).

Family ARCTURIDAE

ASTACILLA Cordiner

longicornis (Sow.)—Robin Hood's Bay (L.W.); Scarborough (J.I.); not common in deep water (J.S.).

Sub-Order ASELLOTA

Family JANIRIDAE

JANIRA Leach

maculosa Leach—Filey, May, 1903 (T.P.).

JAERA Leach

marina (Fabr.)—Scarborough (J.I.); Filey, May, 1903 (T.P.).

Sub-Order ONISCOIDEA

Family LIGIIDAE

LIGIA Fabricius

oceanica (L.)—SEA-SLATER. Robin Hood's Bay (O.G.); Cloughton Wyke, Aug., 1914, Scarborough about high water mark (W.J.C.); Cayton Bay, 1896 (O.G.); Filey, May, 1903 (T.P.).

Family CRYPTONISCIDAE

CRYPTOTHRIX Dana

balani (Spence Bate)—Robin Hood's Bay, in **B. balanoides** (Lab.).

Order AMPHIPODA

Sub-Order GAMMARIDEA

Family AMPELISCIDAE

AMPELISCA Kroeyer*typica* (Bate)—Whitby (V.H.Y.).

Family HAUSTORIIDAE

HAUSTORIUS Mueller, O. F.*arenarius* (Slabb.)—Whitby (V.H.Y.); Robin Hood's Bay (Lab.).

Family GAMMARIDAE—SAND SHRIMPS

GAMMARELLUS Herbst*homari* (Fabr.)—Whitby (V.H.Y.); Robin Hood's Bay (Lab.); Scarborough between tide marks, identified at British Museum; Filey, May, 1903 (T.P.).**GAMMARUS** Fabricius*locusta* (L.)—Whitby (V.H.Y.); Robin Hood's Bay, Scarborough (J.I.).**MARINOGAMMARUS** Schillenberg*marinus* (Leach)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.); Filey, May, 1903 (T.P.).

Family DEXAMINIDAE

DEXAMINE Leach*spinosa* (Montagu)—Scarborough (J.I.); Filey (V.H.Y.).

Family TALITRIDAE

TALITRUS Latreille*saltator* (Montagu)—SAND-HOPPER. Hayburn Wyke, July, 1891 (J.P.A.D.); Scarborough, 1896 (O.G.); Filey Brigg (V.H.Y.).**ORCHESTIA** Leach*gammarella* (Pall.)—SHORE HOPPER. Robin Hood's Bay (Lab.); Scarborough (J.I.); Filey, May, 1913 (F.H.W.).

Family AMPHITHOIDAE

AMPHITHOË Leach*rubricata* (Montagu)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (Lab.); Scarborough (J.I.); Filey, May, 1903 (T.P.).

Family JASSIDAE

JASSA Leach*falcata* (Montagu)—Scarborough, Feb., 1915 (J.I.).

Family COROPHIIDAE

COROPHIUM*volutata* (Pall.)—Filey, May, 1903 (T.P.).**ERICHTHONIUS** Milne Edwards*brasiliensis* (Dana)—Scarborough (J.I.).

Family PODOCERIDAE

PODOCERUS Leach*variegatus* Leach—Scarborough (J.I.); Filey (V.H.Y.).

Sub-Order HYPERIIDEA

Family HYPERIIDAE

HYPERIA Desmarest*galba* Montagu—Whitby (V.H.Y.).**PARATHEMISTO** Boeck*oblivia* (Kroey.)—Robin Hood's Bay (L.W.).

Sub-Order CAPRELLIDEA

Family CAPRELLIDAE—SKELETON SHRIMPS

PSEUDOPROTELLA Mayer*phasma* (Montagu)—Scarborough, South Bay, Feb., 1915 (J.I.).**CAPRELLA** Lamarck*acanthifera* Leach—Scarborough (J.I.), also var. *typica*.*linearis* (L.)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.).*tuberculata* Bate & West.—Scarborough (J.I.); Filey, May, 1913 (F.H.W.).

Order SCHIZOPODA (=MYSIDACEA)

PRAUNUS Leach*flexuosus* (Muell., O. F.)—OPOSSUM or CHAMELEON SHRIMP. Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.); common in rock pools in summer, retiring to deep water in winter; largest caught by shrimpers.**PARAMYSIS** Czerniavsky—GHOST SHRIMPS*arenosa* (Sars)—Robin Hood's Bay, 1938 (N.B.E.).

Order DECAPODA

Sub-Order NATANTIA

Tribe CARIDEA

Family PANDALIDAE

PANDALUS Leach*montagui* Leach—AESOP PRAWN. Very abundant in deep water and not uncommon in rock pools during the summer. It has a peculiar habit of clinging on the outside of a trawl net in hundreds until the latter is hanging over the deck when they drop off and soon die (J.S.).**PANDALINA** Calman*brevirostris* (Rathke)—Robin Hood's Bay—a deep water form not uncommon from 15-40fm. (J.S.).

Family HIPPOLYTIDAE

HIPPOLYTE Leach*varians* Leach—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (Lab.); Scarborough (A.T.W.); abundant in rock pools in summer and down to 35 fm. (J.S.); Filey, May, 1913 (F.H.W.).

SPIRONTOCARIS Bate

spinus (Sow.)—Off Whitby, Sept., 1928, not uncommon in 25-30 fm. (J.S.).

THORALUS (Holthuis)

cranchii (Leach)—Robin Hood's Bay (L.W.); Scarborough, very abundant down to 35 fm. (J.S.); Filey, May, 1913 (F.H.W.).

EUALUS Thallwitz

pusiolus (Kroey.)—Scarborough, April, 1935 (T.B.), identified by British Museum.

Family PALAEMONIDAE

LEANDER Desmarest

serratus (Penn.)—PRAWN. Scarborough (J.I.); very few and far between, 1896 (O.G.).

Family CRANGONIDAE

CRANGON Fabricius

vulgaris L.—SHRIMP. Robin Hood's Bay (Lab.); Hayburn Wyke, 1891 (J.A.P.D.); Filey, May, 1903 (T.P.). "It seems to be getting scarcer every year on the Yorkshire coast" 1896 (O.G.). "Exceedingly abundant in our sandy bays during summer" 1926 (J.S.).

PHILOCHERAS Stebbing

trispinosus (Hailst.)—Scarborough, Filey (J.I.); abundant in sandy places with *C. vulgaris* (J.S.).

Sub-Order REPANTIA

Tribe PALINURA

Family PALINURIDAE

PALINURUS Fabricius

elephas (Fabr.)—ROCK LOBSTER, CRAWFISH. Once taken in trawl off Flamborough (V.H.Y.).

Tribe ASTACURA

Family NEPHROPSIDAE

NEPHROPS Leach

norvegicus (L.)—NORWEGIAN LOBSTER, DUBLIN BAY PRAWN. Brought to Whitby in lobster trap, April, 1894 (T.S.).

HOMARUS Fabricius

gammarus Milne-Edw.—LOBSTER. Whitby, 1896 (T.S.); Robin Hood's Bay, Scarborough; important fishery in summer; abundant in Laminarian zone; large specimens frequently trawled off coast, an albino landed in 1931.

Tribe ANOMURA

Family GALATHEIDAE

GALATHEA Fabricius—SQUAT LOBSTERS.

nexa Embl.—Off Whitby, June, 1926 (J.S.); Scarborough (J.I.); abundant in Horse-Shoe Hole, South Bay at low (spring) tides; common down to 50 fm. (J.S.).

squamifera Leach—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough (J.H.H.); Filey, May, 1913 (F.H.W.); common low down on the littoral (J.H.H.).

intermedia Lillj.—Robin Hood's Bay, 1938 (N.B.E.).

strigosa (L.)—SPINY SQUAT LOBSTER. Whitby, 1926 (T.S.); Robin Hood's Bay, Sept., 1921 (J.I.); Scarborough, 1896 (O.G.); Filey, 1903 (T.P.); generally taken in crab pots in the Laminarian zone.

MUNIDA Leach

rugosa (Fabr.)—Locally a deep water form, abundant 6 miles off Robin Hood's Bay and Hayburn Wyke in 25-30fm., spawning in late spring and early summer (J.S.), off Scarborough Sept., 1926 (J.S.).

Family PORCELLANIDAE

PORCELLANA Lamarck—PORCELAIN CRABS

platycheles (Penn.)—Filey, Sept., 1913, very rare (W.J.C.).

longicornis (L.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Scarborough (J.H.H.); abundant at all zones down to 50 fm. (J.S.); Filey, May, 1913 (F.H.W.).

Tribe THALASSINIDEA

Family CALLIANASSIDAE

UPOGEBIA Leach

stellata (Montagu)—Off Robin Hood's Bay, Oct., 1928 (J.S.).

Tribe PAGURIDEA

Family PAGURIDAE

EUPAGURUS Brandt

bernhardus (L.)—COMMON HERMIT CRAB. Abundant at all zones (O.G.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough, 1896 (O.G.); Filey, May, 1903 (T.P.).

pubescens (Kroey.)—Scarborough, "A deep sea form in which young specimens inhabit the shell (*Turritella*) which later becomes covered and absorbed by a sponge (*Suberites domuncula*)."
Thus full grown specimens are always found in this sponge—not uncommon from 30-50 fm. (J.S.). Specimens identified by British Museum.

ANAPAGURUS Henderson

laevis (Thoms.)—Off Whitby, Robin Hood's Bay and Hayburn Wyke in 20-30 fm. (J.S.).

hyndmanni (Thoms.)—Occasionally in about 30 fm. (J.S.).

Family LITHODIDAE

LITHODES Latreille

maia (L.)—NORTHERN STONE CRAB, locally "KING CRAB" (O.G.). Scarborough, Feb., 1928, in deep water, occasionally stranded alive on rocks (J.S.).

Tribe BRACHYURA

Family PORTUNIDAE—SWIMMING or FIDDLER CRABS

PORTUNUS Leach (= **MACROPIPUS** Prestandrea)

puber (L.)—VELVET CRAB. Robin Hood's Bay, Hayburn Wyke (J.S.); Scarborough, 1896 (O.G.); rare, on Yorkshire coast, 1928 (J.S.).

pusillus Leach—Off Robin Hood's Bay and Scarborough common in 1928 and forms chief food of Wolf-fish and others (J.S.).

marmoreus Leach—MARBLED SWIMMING CRAB. Common in sandy bays, taken in large numbers during summer by both coble-trawls and shrimpers; less common on the "inside" trawling grounds but specimens are usually finely coloured and frequently bear *Sacculina carcini*.

depurator (L.)—Whitby fishing grounds, Oct., 1926 (J.S.); Filey, May, 1924 (J.I.); Bridlington—number washed up 1902 (W.C.H.); occasional in deep water where females are more common than males (J.S.).

PORTUNUS Leach

latipes (Penn.)—Filey, 1914, rare (W.J.C.).

CARCINUS Leach (= **CARCINIDES** Rathburn)

maenas (L.)—SHORE CRAB, locally "DOG CRAB". Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, 1912 (J.I.); Scarborough, 1896 (O.G.); Filey, May, 1903 (T.P.); common on littoral and down to 5 fm.

Family PIRIMELIDAE

PIRIMELA Leach

denticulata (Montagu)—Whitby, Sept., 1914 (F.H.W.); Scarborough, May, 1914, females rare, all specimens taken in rock pools, generally in *Halidrys* (J.I.); Filey, May, 1913 (F.H.W.).

Family CANCRIDAE

CANCER Linnaeus

pagurus L.—EDIBLE CRAB. Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough (J.C.H.); Filey, May, 1913 (F.H.W.); abundant everywhere from 0-35 fm. (J.C.H.).

ATELECYCLUS Leach

rotundatus Olivi—Scarborough, trawl May, 1913 (W.D.B.); abundant locally on trawling grounds 15-30 fm., females very rare, burrow in sand with only the antennae and tips of the claws showing, 1929 (J.S.); in stomach of cod caught near Scarborough, Jan., 1934; several landed among "Queen oysters" during 1935 (W.J.C.).

Family CORYSTIDAE

CORYSTES Latreille

cassivelaunus (Penn.)—MASKED CRAB. Robin Hood's Bay (Lab); Scarborough, Filey, May, 1924 (J.C.H.); abundant on sandy bottom, less common on trawling grounds

Family XANTHIDAE

PILUMNUS Leach

hirtellus (L.)—Robin Hood's Bay, Laminarian zone, Sept., 1921 (J.I.); Scarborough, White Nab Hole, South Bay; Filey, Sept., 1913 (W.J.C.).

Family PINNOTHERIDAE

PINNOTHERES Latreille

pisum (Penn.)—PEA CRAB. Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Filey, Sept., 1913 (J.I.); rare, off Flamborough in **Modiolus**, 1926 (J.S.).

Family LEUCOSIIDAE

EBALIA Leach

tuberosa (Penn.)—Local, about 30 fm., often found in the "false bottom" of frayed rope in a trawl net; occasionally taken off Hayburn Wyke (J.S.).

cranchii Leach—Off Robin Hood's Bay, rare; male with large **Alcyonidium** on its caparace off Hayburn Wyke, Nov., 1927 (J.S.).

tumefacta (Montagu)—Off Robin Hood's Bay, Aug., 1928, rare (J.S.).

Family MAIIDAE

MAIA Lamarck

squinado (Rond.)—THORNBACK CRAB. Robin Hood's Bay, Oct., 1912 (J.I.); Hayburn Wyke, July, 1891, between Cloughton Wyke and Scarborough, 1889, Filey Brigg, Sept., 1889 (J.P.A.D.). (Stevenson doubts records of this species in the Victoria History of Yorkshire, not having seen one himself but, from the reports of the "crabbers", believes it may be found here, 1929 (J.S.)).

EURYNOME Leach

aspera (Penn.)—Off Whitby, Dec., 1928, female, off Robin Hood's Bay, May, 1928, female with eggs, Dec., 1928, female, off Hayburn Wyke, Aug., 1928, immature female, off Scarborough, 7 miles, July, 1928, male. Rare, lives in company with **Ebalia tuberosa** (J.S.).

HYAS Leach

coarctatus Leach—Scarborough, common in deep water, occasional in rock pools (W.J.C.).

araneus (L.)—SPIDER CRAB. Common down to 30 fm., Robin Hood's Bay, Scarborough, 1896 (O.G.); Filey, May, 1903 (T.P.); a crab-pot pest.

INACHUS Fabricius

dorsettensis (Penn.)—SCORPION SPIDER CRAB. Scarborough, very common in deep water (J.S.).

dorhynchus (Leach)—Scarborough, Oct., 1944 (J.H.H.); occasionally in rock pools and crab pots (J.S.).

MACROPODIA Leach

longirostris (Fabr.)—Scarborough (W.J.C.).

rostrata (L.)—LONG-LEGGED SPIDER CRAB. Robin Hood's Bay (L.W.); Scarborough, 1896 (O.G.); very common in deep water (W.J.C.).

ACHAEUS Leach

cranchii Leach—Filey, Sept., 1913, very rare (W.).

Class ARACHNIDA

Sub-Class PYCNOGONIDA

Family PYCNOGONIDAE

PYCNOGONUM Bruennich

littorale (Stroem.)—SEA-SPIDER. Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough (J.H.H.); Filey, May, 1903 (T.P.).

Family PHOXICHILIDAE

ENDEIS Philippi

spinosus (Montagu)—Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough (J.H.H.); Filey, May, 1903 (T.P.).

Family PHOXICHILIDIIDAE

PHOXICHILIDIUM Milne-Edwards

femoratum (Rathke)—Robin Hood's Bay, occasionally in trawl nets, Scarborough (W.J.C.); Filey, May, 1903 (T.P.).

Family NYMPHONIDAE

NYMPHON Fabricius

gracilis Leach—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Cornelian Bay, 1908 (H.).

Phylum MOLLUSCA

Class LORICATA

Order LEPIDOPLEURIDA

Family LEPIDOPLEURIDAE

LEPIDOPLEURUS Risso

asellus (Gmel.)—Whitby, Sept., 1914; Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, Cayton Bay, 1910 (J.P.A.D.); off Scarborough, 1910 (J.A.H.).

cancellatus (Sow.)—Scarborough (W.B.).

HANLEYA Gray

hanleyi (Bean)—Scarborough on stones and shells (W.B.); North Bay, one specimen (J.A.H.).

Order CHITONIDA

Family LEPIDochitonidae

TONICELLA Carpenter

marmorea (Fab.)—Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, 1910, 30 fm. (G.S.B.). Scarborough on stones, shells and seaweeds in Laminarian zone (W.B.).

rubra (L.)—Sandsend, 1901, at roots of Laminaria (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.).

LEPIDOCHITONA Gray

cinereus (L.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, July, 1891 (J.P.A.D.); Scarborough, 1903 (W.C.H.); Filey Brigg, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

CALLOCHITON Gray

achatinus (Brown)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1910 (W.B.).

Family CRYPTOPLACIDAE

ACANTHOCHITONA Gray

crinitus (Penn.)—CHITON. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, 1891 (J.P.A.D.); Scarborough, 1903 (W.C.H.); Filey, May, 1903 (T.P.).

Class LAMELLIBRANCHIA

Sub-class PRIONODESMACEA

Order PROTOBRANCHIA

Family NUCULIDAE

NUCULA Lamarck

nucleus (L.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); off Scarborough (M.B.A.); Bridlington (F.H.W.).

tenuis (Montagu)—Sandsend, 1901 (M.V.L.); Scarborough, Dec., 1912 (F.H.W.).

turgida (Leck. & Marsh.)—Scarborough (W.B.); Bridlington Bay (M.B.A.).

Family NUCULANIDAE

NUCULANA Link

minuta (Muell.)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

YOLDIELLA Verrill & Bush

tomlini (Winckw.)—Filey in shell sand, May, 1914 (F.H.W.).

Order FILIBRANCHIA

Family ARCIDAE

GLYCYMERIS da Costa

glycymeris (L.)—Scarborough, 1910 (W.B.); Yorkshire coast, 1929 (J.S.).

ARCA Linnaeus

(*Navicula*) **tetragona britannica** Reeve—Scarborough, rare (W.B.).
(*Striarca*) **lactea** L.—Scarborough, 1910 (W.B.); Filey, 1910 (S.).

Family ANOMIIDAE

ANOMIA Linnaeus

ephippium L.—SADDLE OYSTER. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

MONIA Gray

patelliformis (L.)—Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.); Flamborough, 20-30 fm. (M.B.A.).

HETERANOMIA Winckworth

squamula (L.)—Sandsend, 1901 (M.V.L.); Scarborough, 1910 (W.B.).

Family MYTILIDAE

MYTILUS Linnaeus

edulis L.—COMMON MUSSEL. Common; Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.); var. **incurvata**, Scarborough, 1910 (W.B.); Scalby Mills, 1910 (J.A.H.).

galloprovincialis Lam.—Scarborough, 1910 (J.A.H.).

MODIOLUS Lamarck

modiolus (L.)—HORSE MUSSEL. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Bridlington, May, 1912 (F.H.W.).

phaseolinus (Phil.)—Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough, 1910 (W.B.).

MUSCULUS Roeding

discors (L.)—Whitby, Sept., 1914, Scarborough, Sept., 1911 (F.H.W.); Cayton Bay, 1910 (J.H.H.); Bridlington, May, 1912 (F.H.W.).

marmoratus (Forbes)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

niger (Gray)—locally "CORDUROY MUSSEL"—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

CRENELLA Brown.

decussata (Montagu)—Rare, Scarborough (W.B.).

(**Rhomboidella prideauxii** (Leach)—Scarborough, 1910 (W.B.).

Order OSTREIFORMES

Family OSTREIDAE

OSTREA Linnaeus

edulis L.—OYSTER. Sandsend, 1901 (M.V.L.), detached shells thrown up on beach; Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Bridlington, May, 1912 (F.H.W.). var. **parasitica** Scarborough, 1910 (W.B.).

Order PSEUDOLAMELLIBRANCHIA

Family PECTENIDAE

PECTEN Mueller

maximus (L.)—LARGE SCALLOP. Scarborough (W.B.); in trawl (O.G.).

CHLAMYS Roeding

varia (L.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

distorta (da Costa)—Sandsend, 1901, detached valves on beach (M.V.L.), Robin Hood's Bay, Oct., 1912; Scarborough (F.H.W.).

(**Aequipecten**) **opercularis** (L.)—QUEEN SCALLOP. Sandsend 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911 (F.H.W.). Trawler "Strathdee" landed nearly a ton on 18 Jan., 1928 (J.S.). Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

(**Palliolum**) **tigerina** (Muell.)—Robin Hood's Bay, Oct., 1912, fragments, Filey, May, 1913, fragments, Bridlington, May, 1912 (F.H.W.). Numbers in stomachs of plaice off Scarborough (M.B.A.).

striata (Muell.)—Off Scarborough (W.B.).

(**Similipecten**) **similis** (Lask.)—Robin Hood's Bay, Oct., 1912, imperfect (F.H.W.).

Family LIMIDAE

LIMA Cuvier

(**Promantellum**) **loscombi** Sow.—Scarborough, rare (W.B.).

Sub-class TELEODESMACEA

Family ASTARTIDAE

ASTARTE Sowerby

sulcata (da Costa)—Scarborough, Dec., 1912 (F.H.W.); Scarborough, 40 fm. (M.B.A.).

montagui (Dil.)—Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

Family THYASIRIDAE

THYASIRA Lamarck

flexuosa (Montagu)—Scarborough, 1910 (W.B.).

ferruginea Winckw.—Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

Family LUCINIDAE

LORIPES Poli

lucinalis leucoma (Turt.)—Robin Hood's Bay (F.H.W.); Scarborough (W.B.).

PHACOIDES Gray

(**Lucinoma**) **borealis** L.—Dredged at Scarborough (W.B.).

Family ERYCINIDAE

KELLIA Turton

suborbicularis (Montagu)—Sandsend, 1901 (M.V.L.) ; Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.) ; Filey, May, 1903 (T.P.).

LASAEA Brown

rubra (Montagu)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

TURTONIA Alder

minuta (Fabr.)—Sandsend, 1901, a few detached valves (M.V.L.) ; Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Bridlington, May, 1912 (F.H.W.).

Family LEPTONIDAE

LEPTON Turton

nitidum Turt.—Scarborough, var. **convexum** (W.B.) ; var. **pisidiale**, Dec., 1912 (F.H.W.) ; Filey, May, 1914, Bridlington, March, 1913 (F.H.W.).

Family MONTACUTIDAE

MONTACUTA Turton

substriata (Montagu)—Robin Hood's Bay, 1910, 20 fm. (G.S.B.) ; Scarborough, Sept., 1913, Filey, May, 1914 (F.H.W.) ; Scarborough, 20 fm. (M.B.A.)—on ventral spines of **Spatangus purpureus**, and occasionally on **Echinocardium flavescens**.

MYSELLA Angar

bidentata (Montagu)—Sandsend, 1901, detached valves (M.V.L.) ; Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

Family CYPRINIDAE

CYPRINA Lamarck

islandica (L.)—Scarborough (T.P., W.B.) ; Bridlington, May, 1912 (F.H.W.).

Family CARDIIDAE

CARDIUM Linnaeus

(**Acanthocardia**) **aculeatum** L.—Whitby, 20 fm. (B.M.A.).

echinatum L.—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Bridlington, May, 1912, Scarborough, Sept., 1911 (F.H.W.) ; Filey, May, 1903 (T.P.).

(**Parvicardium**) **ovale** Sow.—Sandsend, 1901 (M.V.L.) ; Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.).

scabrum Phil.—Scarborough (W.B.).

exiguum Gmel.—Off Robin Hood's Bay (G.S.B.) ; Scarborough, 1910, in shell sand (J.A.H.).

(**Cerastoderma**) **edule** L.—COMMON COCKLE. Sandsend, 1901 (M.V.L.) ; Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

(*Laevicardium*) *crassum* Gmel.—Scarborough, 10 fm. (M.B.A.); Bridlington, May, 1912 (F.H.W.).

Family VENERIDAE

DOSINIA Scopoli

exoleta (L.)—Scarborough (W.C.H.); Filey, May, 1913 (F.H.W.).

lupinus lincta (Montagu)—Sandsend, 1901 (M.V.L.); Scarborough (W.B.); Filey, May, 1903 (T.P.).

VENUS Linnaeus

verrucosa L.—Scarborough, rare (W.B.); may have been imported with ballast, valves from fishermen may have come from between Scarborough and Dogger (J.A.H., 1910).

casina L.—Scarborough (W.B.); off Yorkshire coast, 1929 (J.S.).

(*Timoclea*) *ovata* Penn.—Scarborough, Filey (F.H.W.).

(*Clausinella*) *fasciata* (da Costa)—VENUS SHELL. Off Whitby (M.B.A.); Scarborough (W.B.).

(*Chamelea*) *striatula* (da Costa)—Sandsend, 1901 (M.V.L.); Whitby Sept., 1914; Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); also var. *triangularis* and var. *gibba*, 1910 (J.A.H.); Bridlington, May, 1912 (F.H.W.).

VENERUPIS Lamarck

rhomboides (Penn.)—Sandsend, 1901 (M.V.L.); Scarborough (W.C.H.); also var. *lactea* (W.B.).

pullastra (Montagu)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.).

saxatilis (Fleur.)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, 1910 (J.A.H.).

(*Ruditapes*) *decussata fusca* (Gmel.)—Scarborough (W.B.).

Family PETRICOLIDAE

MYSIA Lamarck

undata (Penn.)—Scarborough (W.B.); Bridlington, 1910 (W.G.).

Family DONACIDAE

DONAX Linnaeus

vittatus (da Costa)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

Family TELLINIDAE

TELLINA Linnaeus

tenuis (da Costa)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

(*Fabulina*) *fabula* Gmel.—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

(*Moerella*) *donacina* L.—Scarborough (W.B.). (F.H.W.).

pygmaea Lov.—Scarborough, 30 fm. 1910 (G.S.B.).

(*Arcopagia*) *crassa* Penn.—Scarborough, 1910 (W.B.).

MACOMA Leach

balthica L.—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.); var. **carinaria**, Scarborough and Filey, 1910 (J.A.H.).

Family SCROBICULARIIDAE

SCROBICULARIA Schumacher

plana (da Costa)—Scarborough, dirty and discoloured living in harbour, 1910 (J.A.H.).

ABRA Lamarck

tenuis (Montagu)—Scarborough, rare, 1910 (W.B.).

alba (Wood, W.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

nitida (Muell.)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Filey, May, 1914 (F.H.W.); Bridlington Bay, food of Dabs (M.B.A.).

prismatica (Montagu)—Scarborough (W.B.); Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

Family ASAPHIDAE

GARI Schumacher

fervensis (Gmel.)—Whitby, Sept., 1914, Robin Hood's Bay, Scarborough, Sept., 1911 (F.H.W.); Filey, 1910 (W.C.H.).

(**Psammocola**) **depressa** (Penn.)—Scarborough (W.B.).

(**Psammobella**) **tellinella** (Lam.)—Off Robin Hood's Bay, June, 1928 (J.S.); Scarborough (W.B.); Bridlington Quay, rare (W.C.H.).

Family SOLENIDAE

CULTELLUS Schumacher

(**Phaxas**) **pellucidus** (Penn.)—Whitby, Sept., 1914 (F.H.W.); off Scarborough, Bridlington (W.C.H.); occasionally common from Filey Brigg to Speeton, 1910 (J.A.H.).

ENSIS Schumacher—RAZOR SHELLS

ensis (L.)—Scarborough (W.B., W.C.H.); Filey, 1903 (W.C.H.).

siliqua (L.)—HOSE FISH. Used as bait, down coast and off shore, cast up after storms. Sandsend, 1901 (M.V.L.); Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

Family MACTRIDAE

MACTRA Linnaeus

corallina cinerea Montagu—TROUGH SHELL. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911 (F.H.W.); Filey, 1903 (W.C.H.); Bridlington, May, 1912 (F.H.W.).

SPISULA Gray

elliptica (Brown)—Sandsend, 1901 (M.V.L.); Scarborough (V.H.Y.).

solida (L.)—Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

subtruncata (da Costa)—Sandsend, 1901 (M.V.L.); Scarborough, 1910 (W.B.); Filey, 1891 (J.P.A.D.); off Flamborough, 1910 (M.B.A.).

Family LUTRARIIDAE

LUTRARIA Lamarck

lutraria (L.)—Scarborough, Filey, 1910 (J.A.H.); Bridlington, May, 1912 (F.H.W.).

Family MYIDAE

MYA Linnaeus

truncata L.—Sandsend, 1901 (M.V.L.); Whitby, 5 fm. (M.B.A.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, Filey, 1910 (J.A.H.); Bridlington, May, 1912 (F.H.W.).

(*Arenomya*) *arenaria* L.—COMMON GAPER. Filey, June, 1931 (E.M.M.); Bridlington (W.C.H.).

SPHENIA Turton

binghami Turt.—Whitby, Sept., 1914 (F.H.W.); Scarborough, 1910 (J.A.H.); Filey, May, 1914 (F.H.W.).

Family ERODONIDAE

CORBULA Lamarck

(*Varicorbula*) *gibba* (Olivi)—Scarborough (W.B.); also var. *rosea*, 1910 (W.B.).

Family HIATELLIDAE

HIATELLA Bosc

arctica L.—Sandsend, on roots of *Laminaria*, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

striata Fleur.—STONE BORER. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

SAXICAVELLA Fischer

jeffreysi Winck.—Off Scarborough (G.J.).

Family PHOLADIDAE

BARNEA Risso

candida (L.)—WHITE PIDDOCK. Scarborough (W.C.H.); Filey (T.P.); Bridlington, May, 1912 (F.H.W.).

ZIRFAEA Gray

crispata (L.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.C.H.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

XYLOPHAGA Turton

dorsalis Turt.—Scarborough (W.B.); Yorkshire Coast, 1929 (J.S.).

Family TEREDINIDAE

TEREDO Linnaeus—SHIPWORMS

norvegicus Speng.—Scarborough in trawl (O.G.); off Flamborough, Sept., 1926 (J.S.).

megotara Forbes & Hanley—Scarborough, washed up in Canadian timber (W.B.).

BANKIA

fimbriatula Moll. & Roch.—Scarborough, 1910 (J.A.H.).

bipennata (Turt.)—Scarborough, on drift wood, 1910 (W.B.).

Sub-class ANOMALODESMACEA

Order LATURNULACEA

Family LATERNULIDAE

COCHLODESMA Couthony

praetenue (Montagu)—Scarborough (W.B., W.C.H.).

Family THRACIIDAE

THRACIA Blainville

villosiuscula (Macgill.)—Scarborough, 1910 (W.B.).

convexa (Wood)—Off Scarborough (G.J.).

Family LYONSIIDAE

LYONSIA Turton

norvegica (Gmel.)—Scarborough (W.B., W.C.H.); off Yorkshire coast, 1929 (J.S.).

Order SEPTIBRANCHIA

Family CUSPIDARIIDAE

CUSPIDARIA

cuspidata brevirostris Brown—Scarborough, 45 fm., 75 miles out (L. & J.T.M.).

Class GASTROPODA

Sub-class PROSOBRANCHIA

Order ARCHAEOGASTROPODA

Family FISSURELLIDAE

EMARGINULA Lamarck

reticulata mülleri Forbes & Hanley—BONNET SHELL. Scarborough, Filey, broken shells (F.H.W.).

PUNCTURELLA Lowe

noachina (L.)—Scarborough, 1910 (W.B.).

Family PATELLIDAE

PATELLA Linnaeus

ulgata L.—COMMON LIMPET, locally "FLITHERS". Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, July, 1891 (J.P.A.D.); Scarborough, 1903 (W.C.H.); Filey Brigg, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.); Flamborough (W.C.H.); var. *coerulea*, Sandsend, 1901 (M.V.L.); Scarborough, 1910 (J.A.H.); var. *picta*, Scarborough, 1910 (J.A.H.).

depressa Penn.—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, Filey, common, 1910 (J.A.H.).

aspera Roeding—Sandsend, 1901 (M.V.L.).

PATINA Leach

pellucida (L.) — BLUE-RAYED LIMPET. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, 1903 (W.C.H.); Filey, May, 1903 (T.P.).

laevis (Penn.) (a form of *pellucida*)—Sandsend, 1901, common (M.V.L.); Filey, May, 1913 (F.H.W.).

Family LOTTIDAE

PATELLOIDA Quoy & Gaimard

(*Collisella*) *tessulata* (Muell.)—TORTOISESHELL LIMPET. Sandsend, 1901 (M.V.L.); Whitby (H.C.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.C.H.); Filey, Gristhorpe, Flamborough, 1910 (W.B.).

(*Tectura*) *virginea* (Muell.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough, 1903 (W.C.H.); Filey, May, 1913 (F.H.W.); Flamborough (J.D.B.); var. *lactea*, Scarborough, 1910 (W.B.).

Family LEPETIDAE

LEPETA Gray

fulva (Muell.)—Robin Hood's Bay, Oct., 1912 (F.H.W.).

Family TROCHIDAE

MARGARITES Gray

helicinus (Fab.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1910 (J.A.H.); Filey, May, 1913 (F.H.W.); var. *fasciata*, Scarborough (W.B.); Filey, May, 1903 (T.P.).

CALLIOSTOMA Swainson

zizyphium conuloides (Lam.)—PAINTED TOP-SHELL. Whitby, 10-20 fm. (M.B.A.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.C.H.); Filey, May, 1903 (T.P.); Flamborough, 30 fm. (P.); var. *lyonsi*, Scarborough, Feb., 1901 (W.C.H.).

occidentale (Migh.)—Off Scarborough, 40 fm., 85 miles N.E., three fine specimens, 1910 (L. & J.T.M.).

CANTHARIDUS Montfort

(*Jujubinus*) *montagui* (Wood)—Scarborough, deep water, 1910 (J.A.H.).

GIBBULA Risso

tumida (Montagu)—Sandsend, 1901 (M.V.L.); Robin Hood's Bay, Oct., 1912 (F.H.W.); off Scarborough, very large (L. & J.T.M.); Flamborough, Bridlington (W.C.H.).

cineraria (L.)—GREY TOP-SHELL. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, worn shells known as "silver churches", 1903 (W.C.H.); Filey Brigg, 1903 (T.P.).

umbilicalis (da Costa)—Sandsend, April, 1936 (H.B.); Robin Hood's Bay, 1933 (E.M.M.).

SKENEIA Fleming

serpuloides (Montagu)—Scarborough (W.B.).*nitens pusilla* (Jeff.)—Scarborough in shell sand, 1910 (J.A.H.).

Order MESOGASTROPODA

Family LACUNIDAE

LACUNA Turton

(Epheria) vincta (Montagu)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, Sept., 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).*crassior* (Montagu)—Sandsend, 1901, small, common (M.V.L.); Scarborough, at extreme L.W. mark, 1910 (J.A.H.); Filey, May, 1913, Bridlington (F.H.W.).*(Lacuna) parva* (da Costa)—Sandsend, 1901 (M.V.L.); Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough, 1910 (W.B.); Filey (F.H.W.); var. *conica*, Scarborough, 1910 (W.B.).*pallidula* (da Costa)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, Filey, 1903 (W.C.H.).

LITTORINA Payraudeau

(Algaroda) littorea (L.).—COMMON PERIWINKLE, WINKLE. Common, Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, April, 1927 (G.F.); Scarborough, 1903 (W.C.H.); Filey Brigg, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).*(Littorivaga) saxatilis* (Olivi)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, 1911 (F.H.W.); Filey Brigg, May, 1903 (T.P.); var. *tenebrosa* and var. *patula*, Hayburn Wyke, 1891 (J.P.A.D.); Scarborough, 1910 (J.T.M.).*(Littorina) neritoides petraea* (Montagu)—SMALL PERIWINKLE. Sandsend, few near H.W. mark, 1901 (M.V.L.); Scarborough, 1944, Filey, 1946 (E.A.W.).*(Neritoides) littoralis* (L.).—FLAT PERIWINKLE. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, 1927 (G.F.); Scarborough, 1903 (W.C.H.); Filey, May, 1903 (T.P.).

Family HYDROBIIDAE

HYDROBIA Hartmann

(Peringia) ulvae (Penn.)—Sandsend, 1901, one specimen in shell sand (M.V.L.); Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

Family RISSOIDAE

CINGULA Fleming

(Parvisetia) alderi (Jeff.)—Whitby, Sept., 1914 (F.H.W.); Scarborough, 1910 (W.B.).

- (*Hyla*) *vitrea* (Montagu)—Scarborough in shell sand (F.H.W.).
 (*Onoba*) *semicostata* (Montagu) — Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough, 10 fm. (M.B.A.); Filey, May, 1913, Bridlington May, 1912 (F.H.W.); var. *aculeus*, Sandsend, 1901 (M.V.L.); Scarborough, Filey, 1910 (J.A.H.); var. *arctica*, Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914 (F.H.W.).
 (*Cingula*) *semistriata* (Montagu)—Sendsend, 1901, common under stones (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

ALVANIA Risso

- (*Manzonina*) *crassa* (Kanm.)—Sendsend, 1901 (M.V.L.); Scarborough, Sept., 1911 (F.H.W.).

- (*Actonia*) *punctura* (Montagu)—Sendsend, 1901 (M.V.L.); Whitby, Sept., 1914, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

RISSOA Desmarest

- (*Turboella*) *inconspicua* Ald.—Scarborough, Sept., 1911, Filey, May, 1914 (F.H.W.).

- parva* (da Costa)—Sendsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.); var. *exilis*, rare, var. *semicostata*, Scarborough, 1910 (J.A.H.).

- guerinii* Rec.—var. *costulata*, Scarborough (W.B.).

- (*Rissoa*) *membranacea* (Adams, J.)—Robin Hood's Bay, 1940 (Lab.).

BARLEEIA Clark

- unifasciata* (Montagu)—Scarborough (W.B.).

Family TORNIDAE

TORNUS Turton

- subcarinatus* (Montagu)—Scarborough, 1912 in shell sand—first record in Yorkshire; Cayton Bay, May, 1913 (F.H.W.).

Family SKENEOPSISIDAE

SKENEOPSIS Iredale

- planorbis* (Fab.)—Sendsend, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Filey, May, 1913 (F.H.W.).

Family OMALOGYRIDAE

OMALOGYRA Jeffreys

- atomus* (Phil.)—Scarborough on sea-weed (G.J.); Filey, May, 1913 (F.H.W.).

AMMONICERA Vayssière

- rota* (Forbes & Hardy)—Scarborough in rock pools among sea-weeds (G.J.).

Family TURITELLIDAE

TURITELLA Lamarck

- communis* Risso—Whitby, 20 fm. (M.B.A.); Scarborough, Filey, May, 1913, Bridlington (F.H.W.).

Family CAECIDAE

CAECUM Fleming*imperforatum* (Kanm.)—Scarborough, 1910 (W.B.).*(Brochina) glabrum* (Montagu) — Scarborough (W.B.); Filey (F.H.W.).

Family CERITHIIDAE

BITTIUM Leach*reticulatum* (da Costa)—Off Scarborough (P.H.G.).

Family CERITHIOPSIDAE

CERITHIOPSIS Forbes & Hanley*tubercularis* (Montagu)—Scarborough, 1910 (W.B.).

Family EPITONIIDAE

CIRSOTREMA Moersch*(Gyroscale) commutatum* (Monterosato)—Off Scarborough, 1910 (J.A.H.).**CLATHRUS** Oken*clathrus* (L.)—Scarborough (W.B.).*turtonis* (Turt.)—Scarborough (W.B.).*trevelyanus* (Johnst.)—Off Whitby (L. & J.T.M.); Robin Hood's Bay, 30-35 fm., 1910 (G.S.B.); Scarborough (J.).

Family ACLIDIDAE

GRAPHIS Jeffreys*albida* (Kanm.)—Scarborough (W.B.); Filey, May, 1913 (F.H.W.).**ACLIS** Loven*ascaris* (Turt.)—Off Scarborough, 1910 (G.S.B.).

Family EULIMIDAE

EULIMA Risso*glabra* (da Costa)—Scarborough, rare (W.B.).*trifasciata* (Adams)—Off Whitby (L. & J.T.M.); Scarborough, Dec., 1912 (F.H.W.).*philippi* (Rayn & Ponzi)—Off Whitby (L. & J.T.M.), Scarborough (F.H.W.).**BALCIS** Leach*alba* (da Costa)—Off Whitby (L. & J.T.M.); Scarborough, 1910 (W.B.).*lubrica* (Monterosato)—Yorkshire coast, 1892 (T.S.).

Family STYLIFERIDAE

PELSENEERIA Koehler & Vaney*(Rosenia) stylifera* (Turt.)—Scarborough on *Echinus* (W.B.); on spines of *Spatangus purpureus*, 1929 (J.S.); Filey on *Echinus esculentus* (L.).

Family TRICHOTROPIDAE

TRICHOTROPIS Broderip & Sowerby*borealis* Brod. & Sow.—Off Whitby (L. & J.T.M.); Scarborough, 1910 (W.B.).

Family CAPULIDAE

CAPULUS Montfort

ungaricus (L.)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914, Scarborough and Filey in sand (F.H.W.).

Family APORRHAIIDAE

APORRHAIIS da Costa

pespelecani quadrifidus (da Costa)—Off Whitby (L. & J.T.M.); Yorkshire coast, 1929 (J.S.).

Family NATICIDAE

AMAUROPSIS Moersch

islandica (Gmel.)—Off Whitby (L. & J.T.M.); Scarborough (L.).

NATICA Scopoli

(**Euspira**) **pallida groenlandica** Moell.—Off Whitby (L. & J.T.M.); Scarborough shell sand (F.H.W.); Flamborough, 30 fm. (P.).

fusca Blainv.—Flamborough, 30 fm. (P.).

catena (da Costa)—Sandsend, 1901 (M.V.L.); off Whitby (L. & J.T.M.); Robin Hood's Bay, May, 1907, Filey, May, 1918 (F.H.W.).

poliana alderi Forbes—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, 1911, Filey, May, 1913 (F.H.W.); var. **lactea**, off Whitby (L. & J.T.M.); var. **subovalis**, Bridlington, 30 fm., (V.H.Y.).

montagui (Forbes)—Off Whitby, also **albidula** (L. & J.T.M.).

Family ERATORIDAE

TRIVIA Broderip

monacha (da Costa)—COWRIE. Sandsend, 1901 (M.V.L.); off Whitby (L. & J.T.M.); Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.).

Family LAMELLARIIDAE

VELUTINA Fleming

velutina (Muell.)—Sandsend, 1901, common in shell sand (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, 1911 (F.H.W.); Filey, 1910 (J.A.H.); Bridlington, May, 1912 (F.H.W.).

(**Velutella**) **plicatilis** (Muell.)—Scarborough, 1910 (W.B.).

LAMELLARIA Montagu

perspicua (L.)—Off Whitby (L. & J.T.M.); Scarborough (W.B.).

Order STENOGLOSSA

Family MURICIDAE

TROPHEON Montfort

(**Trophonopsis**) **truncatus** (Stroem.)—Off Whitby (L. & J.T.M.); Robin Hood's Bay, 30-35 fm., 1910 (G.S.B.); off Scarborough, 45 miles N.E., Jan., 1927 (J.S.); Bridlington, deep water (W.C.H.).

barvicensis (Johnst.)—Yorkshire coast, 1910 (G.J.); from trawlers 1910 (J.A.H.).

NUCELLA Roeding

lapillus (L.)—DOG WHELK. Sandsend, 1901, very common (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, 1891 (J.P.A.D.); Scarborough, 1903 (W.C.H.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.); Scarborough; var. **minor**, 1910 (J.A.H.); and var. **ovalis**, 1910 (J.T.M.); Bridlington, var. **major**, 1910 (J.A.H.).

OCENEBRA Leach

erinacea (L.)—Scarborough (W.B.); Filey, May, 1913 (F.H.W.); Flamborough (W.C.H.).

Family **BUCCINIDAE****LIOMESUS** Stimpson

ovum (Turt.)—Off Whitby (L. & J.T.M.); Scarborough, 1910 (W.B.).

BERINGIUS Dall

turtoni (Bean)—Off Whitby (L. & J.T.M.), Scarborough (W.C.H.).

VOLUTOPSIUS Moersch

norvegicus (Gmel.)—Yorkshire coast, 1910 (G.J.); Scarborough, two specimens from harbour and occasionally brought in by trawlers with **Pecten opercularis**, 1910 (J.A.H.).

COLUS (Roeding)

islandicus (Gmel.)—Scarborough, immature specimens from harbour; many records erroneous and should be the more common **gracilis**, 1910 (J.A.H.).

gracilis (da Costa)—Whitby, 20 fm. (M.B.A.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.B.); Filey, May, 1913 (F.H.W.); Flamborough (M.B.A.).

(**Siphonorbis**) **howsei** (Marsh.)—Off Whitby (L. & J.T.M.); Scarborough, rare (J.A.H.).

NEPTUNEA Roeding

antiqua (L.)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (O.G.); Filey, May, 1903 (T.P.); Bridlington and Flamborough, very common in deep water (W.C.H.); off Whitby, var. **ventricosa** and var. **alba** (L. & J.T.M.).

BUCCINUM Linnaeus

undatum L.—COMMON WHELK. Sandsend, 1901, common (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough, used for bait in autumn and winter, but specimens from Norfolk coast as fishermen state the shells are not so hard and the "fish" better for bait, 1910 (J.A.H.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.); off Whitby var. **striata**, var. **littorale**, var. **pelagicum** (L. & J.T.M.), Scarborough var. **acuminatum**, 1910 (W.B.); Bridlington, var. **sinistrorsum**, 1910 (W.C.H.).

Family **NASSARIIDAE****NASSARIUS** Dumeril

(**Hima**) **reticulatus** (L.)—Whitby (L. & J.T.M.); Scarborough (F.H.W.); Bridlington Bay (M.B.A.).

incrassatus (Stroem.)—Sandsend, very common, 1901 (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Hayburn Wyke, 1927 (G.F.); Scarborough (W.C.H.); Filey, May, 1903 (T.P.); Bridlington, May, 1912 (F.H.W.); Whitby, var. **minor** (L. & J.T.M.); Scarborough, var. **similans** from trawlers 1910 (J.T.M.).

Family FASCIOLARIIDAE

TROSCHELIA Moersch

berniciensis (King)—Scarborough, 1910 (W.B.); only one Yorkshire specimen, 1910 (J.A.H.).

Family TURRIDAE

LORA Gistel

turricula (Montagu)—Sandsend, 1901, in shell sand (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, May, 1907, Scarborough, Sept., 1911, Filey, May, 1913, Bridlington (F.H.W.); var. **rosea**, off Whitby (L. & J.T.M.); Bridlington, May, 1912 (F.H.W.).

trevelliana (Turt.)—Off Whitby (L.); Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough in stomachs of haddock (W.B.); Filey, 1910 (J.T.M.); Bridlington (F.H.W.).

rufa (Montagu)—Sandsend, 1901, common in shell sand (M.V.L.); Whitby, Robin Hood's Bay, Scarborough, Filey, May, 1913, Bridlington, May, 1912 (F.H.W.).

MANGELIA Risso

attenuata (Montagu)—Scarborough (W.B.).

(**Bela**) **coarctata** (Forbes)—Sandsend, 1901, one specimen in shell sand (M.V.L.); Scarborough, Sept., 1911 (F.H.W.).

(**Bela**) **nebula** (Montagu)—Whitby (L. & J.T.M.); Scarborough (W.B.); and var. **elongata**.

PHILBERTIA Monterosato

purpurea (Montagu)—Scarborough, 1910 (W.B.).

linearis (Montagu)—Sandsend, 1901, and common in shell sand (M.V.L.); off Whitby (L. & J.T.M.); Robin Hood's Bay, Oct., 1912, Scarborough, 1911, Filey, May, 1913 (F.H.W.).

(**Teres**) **teres** (Reeve)—Off Scarborough (G.J.); from trawlers, rare 1910 (J.A.H.).

Sub-Class OPISTHOBRANCHIA

Order BULLOMORPHA

Family ACTEONIDAE

ACTEON Montfort

tornatilis (L.)—Whitby (L. & J.T.M.); Scarborough, not common (W.C.H.); Filey (F.H.W.); var. **subulata**, off Whitby (L. & J.T.M.).

t. tenellus Lov.—Off Whitby (L. & J.T.M.).

Family PYRAMIDELLIDAE

CHRYSTALLIDA Carpenter

(*Parthenina*) *obtusa* (Brown)—Sandsend, 1901 (M.V.L.); Whitby, Sept., 1911; Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

indistincta (Montagu)—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1910, in shell sand, rare (J.A.H.); Filey, May, 1913 (F.H.W.).

decussata (Montagu)—Scarborough, Feb., 1913 (F.H.W.).

(*Ividella*) *excavata harveyi* (Thomps.)—Scarborough (W.B.).

(*Partulida*) *spiralis* (Montagu)—Whitby, Sept., 1914, Robin Hood's Bay, May, 1907 (F.H.W.); Scarborough (W.B.); Filey, May, 1913 (F.H.W.).

MENESTHO Moeller

(*Noemiamea*) *dolioliformis* (Jeffer.)—Scarborough in shell sand (W.B., G.J.).

(*Evalea*) *divisa* (Adams, J.)—Off Whitby (L. & J.T.M.).

obliqua Ald.—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1910 (W.B.); Filey, May, 1913 (F.H.W.).

ODOSTOMIA Fleming

(*Jordaniella*) *nivosa* (Montagu)—Scarborough (W.B.).

truncatula Jeffer.—Scarborough, 1910—one in shell sand (J.A.H.).

(*Odostomia*) *plicata* (Montagu)—Scarborough (W.B.).

turrita Hanl.—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, common in shell sand (J.A.H.); Filey, May, 1913 (F.H.W.).

unidentata (Montagu)—Sandsend, 1901, a few in shell sand (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, 1911, Filey, May, 1913, Bridlington (F.H.W.).

acuta Jeffer.—Scarborough, 1910, 30-35 fm. (G.S.B.).

(*Brachystomia*) *eulimoides* Hanl.—Scarborough, 1910, in shell sand (J.A.H.).

(*Brachystomia*) *albella* (Lov.)—Sandsend, 1901, one specimen in shell sand (M.V.L.).

scalaris (Macgill.)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, 1911, Filey, May, 1913 (F.H.W.); var. *dubia*, Scarborough in shell sand (J.A.H.).

EULIMELLA Jeffreys

laevis (Brown)—Sandsend, 1901, one specimen in shell sand (M.V.L.).

(*Ebalina*) *nitidissima* (Montagu)—Scarborough, Feb., 1912 (F.H.W.).

TURBONILLA Risso

elegantissima (Montagu)—Scarborough (F.H.W.).

(*Pyrgisculus*) *crenata* (Brown)—Off Whitby (L. & J.T.M.); off Flamborough as food of plaice (M.B.A.).

Family DIAPHANIDAE

DIAPHANA Brown

minuta Brown—Sandsend, 1901, one specimen in shell sand (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

Family RETUSIDAE

RETUSA Brown

retusa (Mat. & Rack.)—Sandsend, 1901, common in shell sand (M.V.L.); Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (W.C.H.); Filey, May, 1913 (F.H.W.).
alba (Kanm.)—Sandsend, 1901, one specimen in shell sand (M.V.L.); Scarborough (F.H.W.); Bridlington Bay (M.B.A.).
 (Cylichnina) *subcylindrica* (Brown)—Off Whitby, also var. *nitidula* (L. & J.T.M.); Scarborough, 1910 (W.B.).

Family TRICLIDAE

CYLICHNA Loven

cylindracea (Penn.)—Scarborough (W.C.H.); Filey, May, 1913 (F.H.W.).

ROXANIA Gray

utriculus cranchii (Flem.)—Off Whitby (L. & J.T.M.); Scarborough (W.B.).

Family PHILINIDAE

HERMANIA Monterosato

scabra (Muell.)—Scarborough (W.B.; G.J.).

catena (Montagu)—Sandsend, 1901, two incomplete specimens in shell sand (M.V.L.); Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

OSSIANIA Monterosato

quadrata scutulum (Lov.)—Off Whitby (L. & J.T.M.); Scarborough, Filey, 1910 (J.A.H.).

alata (Forbes)—Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912, Scarborough, Sept., 1911, Filey, 1913 (F.H.W.).

angulata (Jeffer.)—Filey, May, 1913 (F.H.W.).

Order PTEROPODA

Family SPIRATELLIDAE

SPIRATELLA Blainville

retroversa (Flem.)—Whitby, 1914, Scarborough, Filey, May, 1913 (F.H.W.).

Order APLYSIOMORPHA

Family APLYSIIDAE

APLYSIA Linnaeus

punctata (Cuv.)—SEA-HARE. Robin Hood's Bay, Aug., 1922 (A.I.B.); Scarborough, abundant, Aug., 1913, not seen again till Aug., 1922—5 in. to 6 in. long with egg coils (J.I.); Cayton Bay, July, 1922 (A.I.B.); Filey (F.H.W.).

Order ASCOGLOSSA

Family ELYSIIDAE

ELYSIA Risso*viridis* (Montagu)—Robin Hood's Bay (L.W.).

Family LIMAPONTIIDAE

LIMAPONTIA Johnston*capitata* (Muell.)—Robin Hood's Bay, Aug., 1913 (J.I.); Filey, May, 1913 (F.H.W.).

Order PLEUROBRANCHOMORPHA

Family PLEUROBRANCHIDAE

BERTHELLA Blainville*plumula* (Montagu)—Cornelian Bay, 1922 (J.I.).

Order NUDIBRANCHIA — SEA SLUGS

Family TRITONIIDAE

TRITONIA Cuvier*hombergii* Cuv.—Bridlington Bay, Flamborough, 30 fm. (M.B.A.).
(*Duvaucelia*) *lineata* Ald. & Hanc.—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); common in deep water off the coast (J.S.).

Family LIMACIIDAE

AEGIRES Lovén*punctilucens* (d'Orb.)—Scarborough, May and Sept., 1923 (J.I.).**LIMACIA** Mueller*clavigera* (Muell.)—Robin Hood's Bay, Sept., 1912 and 1921 (J.I.).**POLYCERA** Cuvier*quadri-lineata* (Muell.)—Sandsend, 1901, common on *Delesseria sanguinea*, spawning from end of July to the beginning of September (M.V.L.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (L.W.); Scarborough (J.I.); Filey, May, 1913 (F.H.W.).*(Palio) dubia* Sars—Robin Hood's Bay, Scarborough, Filey, Sept., 1913 (J.I.).*(Palio) nothus* (Johnst.)—Robin Hood's Bay, Scarborough, May, 1923, Filey, Sept., 1913 (J.I.).**ACANTHODORIS** Gray*pilosa* (Muell.)—Robin Hood's Bay (J.I.); Scarborough, 1910 (J.A.H.).**ADALARIA** Bergh*proxima* (Ald. & Hanc.)—Whitby, Sept., 1914 (F.H.W.); Scarborough, May, 1913 (J.I.).*loveni* (Ald. & Hanc.)—Off Whitby, July, 1928 (J.S.).

ONCHIDORIS Blainville

fusca (Muell.)—Sandsend, 1901, profusely covering large rock, uncovered only at spring tides—spawning in mid-August (M.V.L.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I.); off Scarborough—fairly common, 31 fm. (M.B.A.); Filey, May, 1913 (F.H.W.).

muricata (Muell.)—Sandsend, 1901—common (M.V.L.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I.); Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

sparsa (Ald. & Hanc.)—Robin Hood's Bay, Cornelian Bay, Oct., 1911 (J.I.).

depressa (Ald. & Hanc.)—Scarborough (J.A., J.I.).

(*Atalodoris*) *pusilla* (Ald. & Hanc.)—Scarborough, June, 1922 (J.I.).

GONIODORIS Forbes & Goodsir

nodosa (Montagu) — Sandsend, 1901, commonest **Nudibranch** (M.V.L.); Robin Hood's Bay, Scarborough (J.I.); Filey, May, 1913 (F.H.W.).

castanea (Ald. & Hanc.)—Scarborough, June, 1922 (three on *Botryllus*) and again August, 1924 (J.I.).

OKENIA Menke

(*Idaliella*) *aspersa* (Ald. & Hanc.)—Robin Hood's Bay (L.W.).

ANCULA Loven

cristata (Ald.)—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.).

Family GLOSSODORIDIDAE

ECHINOCHILA Morch

laevis (L.)—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.).

ARCHIDORIS Bergh

pseudoargus (Rapp.)—SEA-LEMON. Sandsend, 1901 (M.V.L.); Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay (J.I.); Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.). Abundant on the littoral but not found in deep water (J.S.).

JORUNNA Bergh

tomentosa (Cuv.)—Sandsend, 1901 (M.V.L.); Robin Hood's Bay (J.I.); Scarborough, Sept., 1911, Filey, May, 1913 (F.H.W.).

Family SCYLLAEIDAE

SCYLLAEA Linnaeus

pelagica L.—Scarborough, Aug., 1910 (J.I.).

Family DEONDRONOTIDAE

DENDRONOTUS Alder & Hancock

frondosus (Ascanius) Ald. & Hanc.—Whitby, 20 fm. (M.B.A.); Scarborough, Dec., 1922 (J.A.H.); Flamborough (J.D.B.), the commonest species of **Nudibranch** in deep water—all along coast especially off Robin Hood's Bay and Hayburn Wyke (J.S.).

Family DOTOIDAE

DOTO Oken

coronata (Gmel.)—Robin Hood's Bay, Scarborough (J.I.); Filey Brigg, May, 1903 (T.P.).

fragilis (Forbes)—Whitby, 10-30 fm. (M.B.A.); Robin Hood's Bay (L.W.).

Family PROCTONOTIDAE

ANTIOPELLIA Hoyle

cristatus (Del. Chi.)—Robin Hood's Bay (J.I.); Scarborough, July, 1911 (J.I.).

Family CORYPHELLIDAE

CORYPHELLA Grey

verrucosa rufibranchialis (Johnst.)—Robin Hood's Bay (J.I.); Scarborough, Sept., 1911, Filey, 1914 (F.H.W.).

lineata (Lov.)—Off Whitby, 34-36 fm., 1910 (M.B.A.).

Family EUBRANCHIDAE

EUBRANCHUS Forbes

tricolor pallidus (Ald. & Hanc.)—Robin Hood's Bay, Scarborough, June, 1922 (J.I.).

exiguus (Ald. & Hanc.)—Robin Hood's Bay (L.W.).

Family TERGIPEDIDAE

EMBLETONIA (Alder & Hancock)

pulchra (Ald. & Hanc.)—Robin Hood's Bay, Scarborough, 1910 (J.I.).

TRINCHESIA Ihering

aurantia (Ald. & Hanc.)—Scarborough on *Tubularia*, Feb., 1913 (J.I.).

foliata (Forbes & Goods.)—Scarborough, May, 1913 (J.I.).

viridis (Forbes)—Robin Hood's Bay, Scarborough, April, 1923 (J.I.).

Family FACELINIDAE

FACELINA (Alder & Hancock)

auriculata (Muell.)—Robin Hood's Bay, Scarborough (J.I.); Filey, 1910 (T.P.); var. *drummondi*, Robin Hood's Bay (J.I.); Scarborough, Aug. and Sept., 1922, numerous (A.I.B.).

elegans (Ald. & Hanc.)—Scarborough on *Tubularia*, June, 1922.

Family AEOLIDIIDAE

AEOLIDIA Cuvier

papillosa (L.)—Sandsend, one specimen on seaweed at spring tide : "species must be common judging from quantity of its pink worm-like spawn to be seen all over the rocks" (M.V.L.); Robin Hood's Bay (J.I.); Scarborough, Sept., 1911 (F.H.W.); Filey, May, 1903 (T.P.); Flamborough (J.D.B.).

Sub-Class PULMONATA
Order BASOMMATOPHORA
Family ELLOBIIDAE

LEUCOPHYTIA Winckworth

bidentata (Montagu)—Scarborough, 1910 (W.B.); Filey (F.H.W.).

PHYTIA Gray

myosotis denticulata (Montagu)—Scarborough, 1910 (W.B.).

Family OTINIDAE

OTINA Gray

ovata (Brown)—Scarborough (W.B.); "this species is strictly littoral, living usually in chinks in rocks or in empty **Balanus** shells between tide marks. It is sometimes uncovered as long as 18 hours a day" (W.J.C.).

Class SCAPHOPODA
Family DENTALIIDAE

DENTALIUM Linnaeus

entalis L.—TOOTH SHELL. Whitby (T.P.); deep water off Scarborough (W.C.H.).

vulgare (da Costa)—Scarborough, 1910 (W.B.).

Class CEPHALOPODA
Order DECEMBRACHIATA
Sub-Order TEUTHOIDEA
Family ARCHITEUTHIDAE

ARCHITEUTHIS Steenstrup

clarkei (Robs.)—Scarborough, Jan. 14th, 1933—stranded on South side near the Aquarium. Total length 17ft. 5in., weight 16st. 11lb.; only known specimen at time (F.D.T.), described by G. C. Robson in Proc. Zool. Soc. Lond., Sept., 1933, also Nat., 1933, p. 157 and 1934 p. 57. This species was named after our recorder W. J. Clarke. **sp.** At Ravenscar 16 ft. specimen washed ashore Oct., 1938. Beak only preserved; identified at the British Museum (W.J.C., Nat., 1939, p. 136).

Family OMMASTREPHIDAE

OMMASTREPHES Orbigny

pteropus Steen.—Cast up at Redcliffe, March 1st, 1912 (W.J.C.). (Nat., 1908, gives photo of 5ft. 10½in. specimen stranded at Scarborough but no date.)

caroli Furt.—Very rare squid, 5ft. 3in. specimen washed up in North Bay, Scarborough, March 18th, 1927, another 4ft. 6in. in South Bay, Feb. 1st, 1928 (J.S.); 5ft. 10in. specimen stranded alive on South sands, Dec. 22nd, 1931; one measuring 5ft. and 24 lbs. weight at South Bay, Jan. 31st, 1935; a 5ft. 2in. specimen on North Shore, 1 mile N. of Scarborough, Feb. 7th, 1938; a 4ft. 10in. specimen in South Bay near Aquarium, Feb. 7th, 1938. One female stranded at Filey, Jan. 9th, 1930, 3ft. 9in. long (W.J.C.).

SAGITTATUS Risso

sagittatus Lam.—Scarborough, common in 1928 and 1937 in water 35-50 fm. deep, frequently cast up on shore—records in 1929, 1931, 1933, 1936, 1938; Filey, 1936; Cayton Bay, 1937 (W.J.C.).

TODAROPSIS Girard

eblanae (Ball)—Off Robin Hood's Bay, April, 1928—identified at British Museum, second record from North Sea (J.S.).

Family **LOLIGINIDAE****ALLOTEUTHIS** Wuelker

media (L.)—Trawlers' nets sometimes white with them during summer; not found within 3 miles of shore. Most plentiful off Robin Hood's Bay and Hayburn Wyke, average size 3in. (J.S.); Bridlington Bay (M.B.A.).

LOLIGO Lamarck

forbesii Steen.—Abundant, especially during autumn; disappear in winter and spring (J.S.), caught in large numbers a few miles off Scarborough (length 2½ft.); brought in to harbour and sold as bait; rarely portions of pen picked up on shore, 1910 (J.A.H.); Whitby (T.S.).

Sub-Order **SEPIOIDEA**Family **SEPIIDAE****SEPIA** Linnaeus

officinalis L.—**CUTTLEFISH**. Seldom seen but 'sepiostares' or 'bones' are often washed up after storms—early in 1928 hundreds cast up in South Bay, Scarborough (J.S.); one adult taken in trawl 40 mls. N.E. of Scarborough Feb., 1932 (W.J.C.).

Family **SEPIOLIDAE****SEPIOLA** Leach

(**Heterosepiola**) **atlantica** d'Orb.—Not uncommon; too small to be held in trawl nets, though sometimes found on decks of trawlers fishing in smooth ground, e.g. Robin Hood's Bay, Hayburn Wyke; caught in shrimp nets at L.W. at Scarborough (J.S.); food for Dabs and Grey Gurnard, 1910 (M.B.A.).

SEPIETTA Naef

oweniana (d'Orb.)—Scarborough, Filey, 1910 (J.A.H.); among debris from shrimp nets, Filey Bay, 1914 (F.H.W.).

ROSSIA Owen

macrosoma (Del. Chi.)—Off Hayburn Wyke, Nov., 1927, identified at British Museum (J.S.); one taken from stomach of cod caught near Scarborough, March, 1933 (W.J.C.).

Order **OCTOPODA**Family **OCTOPODIDAE****ELEDONE** Leach

cirrrosa (Lam.)—Whitby, April, 1928 (W.J.C.); Robin Hood's Bay (J.S.); off Hayburn Wyke, April, 1932 (F.D.T.); comparatively common from 20-25 fm. (J.S.).

Phylum ECHINODERMATA

Class CRINOIDEA — SEA LILIES

Family ANTEDONIDAE

ANTEDON de Fréminville

bifida (Penn.)—ROSY FEATHER STAR. Two broken specimens off Robin Hood's Bay, 30 fm., Sept., 1928.

Class ASTEROIDEA — SEA STARS

Order PHANEROZONIA

Sub-order PAXILLOSA

Family ASTROPECTINIDAE

ASTROPECTEN Gray

irregularis (Penn.)—BURROWING STARFISH or BUTTHORN. Common on sandy bottoms along coast, mainly in 20-30 fm. (M.B.A.); Scarborough on offshore grounds, feeding on small bivalves swallowed whole (W.D.B.); seen among queen oysters landed at Scarborough, Nov., 1936 (W.J.C.); off Whitby (P.).

Family LUIDIIDAE

LUIDIA Forbes

ciliaris (Phil.)—LONG-ARMED STARFISH. Exceedingly abundant in deep water off coast (J.S.).

sarsi Dueb. & Kor.—LINGTHORN. Not very common and grows to great size, mainly in deep water in 10-30 fm. (M.B.A.).

Sub-order VALVATA

Family GONIASTERIDAE

HIPPIASTERIA Gray

phrygeana (Par.)—KNOTTY CUSHION STARFISH. Rare, occasionally trawled in from 40 fm. (J.S.); off Whitby (L. & J.T.M.); near Scarborough in July, 1933, and June, 1936 (W.J.C.); off Flamborough, Sept., 1926 (J.S.).

Order SPINULOSA

Family ASTERINIDAE

ANSEROPODA Nardo

membranaceus (Retz.)—BIRD'S-FOOT STAR. Very rare, Scarborough, 1896 (O.G.).

Family SOLASTERIDAE

SOLASTER Forbes

papposus (L.)—COMMON SUNSTAR. Common from low-tide mark down. Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Hayburn Wyke, July, 1891 (J.P.A.D.); Filey, 1903 (T.P.).

endeca (L.)—PURPLE SUNSTAR. Common in deep water, Robin Hood's Bay, Scarborough (J.C.H.).

Family ECHINASTERIDAE

HENRICIA Gray

sanguinolenta (Muell., O. F.)—Fairly common from littoral downwards, generally on rocky ground. Whitby, Sept., 1914, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1896 (O.G.); Filey, May, 1913 (F.H.W.).

Order FORCIPULATA

Family ASTERIIDAE

ASTERIAS Linnaeus

rubens L.—COMMON STARFISH or FIVE FINGERS. Very common in all zones (J.C.H.). Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Scarborough (J.C.H.); Hayburn Wyke, July, 1891 (J.P.A.D.); Filey, May, 1903 (T.P.).

Class OPHIUROIDEA — BRITTLE STARS

Order OPHIURAE

Family OPHIOTRICHIDAE

OPHIOTHRIX Mueller & Troschel

fragilis (Abild.)—BRITTLE STAR. Common in deep water and rock pools. Off Whitby, 20 fm., Bridlington (M.B.A.); Robin Hood's Bay (L.W.); Scarborough, Filey, May, 1903 (T.P.).

Family OPHIOCOMIDAE

OPHIOCOMINA Koehler

nigra (Abild.)—BLACK BRITTLE STAR. Robin Hood's Bay (Lab.).

Family OPHIACTIDAE

OPHIOPHOLIS Mueller & Troschel

aculeata (L.)—DAISY BRITTLE STAR. Under stones at very low tide, Scarborough (W.B.).

Family AMPHIURIDAE

AMPHIURA Forbes

filiformis (Muell., O. F.)—THREAD-RAYED BRITTLE STAR. Off Whitby, Bridlington Bay (M.B.A.).

AMPHIPHOLIS Ljungman

squamata (Del. Chi.)—GREY BRITTLE STAR. Common, Robin Hood's Bay (Lab.).

Family OPHIOLEPIDAE

OPHIURA Lamarck

texturata Lam.—SAND STAR. Common on sandy bottoms along coast, Scarborough (J.C.H.); off Whitby (T.P.); Robin Hood's Bay, Oct., 1912 (J.I.); Filey, May, 1913 (F.H.W.).

albida Forbes—LESSER SAND STAR. Whitby, Sept., 1914 (F.H.W.); Filey, Sept., 1913 (J.I.).

Class ECHINOIDEA — SEA URCHINS

Order DIADEMATOIDEA

Family ECHINIDAE

PSAMMECHINUS Agassiz, L.

miliaris (Gmel.)—PURPLE-TIPPED URCHIN, locally "BUZZES" or "BUZZERS". Abundant at all zones on rocky ground. Whitby, Sept., 1914 (F.H.W.); Robin Hood's Bay, Scarborough, Nov., 1904 (J.H.); Filey Brigg, May, 1903 (T.P.).

ECHINUS Linnaeus

esculentus L.—COMMON URCHIN. Abundant from low tide to 50 fm., albinos taken at intervals. Robin Hood's Bay, Oct., 1912 (J.I.); Scarborough (H.); Filey, May, 1913 (F.H.W.).

acutus Lam.—Occasional in deep water (J.S.).

melo Lam.—At 30 fm. off Whitby and Flamborough (P.).

Order CLYPEASTROIDEA

Family FIBULARIIDAE

ECHINOCYAMUS Leske

pusillus (Muell., O. F.) — CAKE URCHIN or GREEN-PEA URCHIN. Common off coast (J.S.); Scarborough, Sept., 1919 (A.I.B.); often eaten by haddock (M.B.A.).

Order SPATANGOIDEA

Family SPATANGIDAE

SPATANGUS Mueller O. F.

purpureus (Muell., O. F.)—PURPLE-HEART URCHIN. Common in deep water, often bearing small bivalve molluscs. Whitby, 20 fm. (P.); Scarborough, 1896 (O.G.); Flamborough, 30 fm. (M.B.A.).

ECHINOCARDIUM Gray

cordatum (Penn.)—HEART URCHIN. Common in sandy bays, especially Filey; Whitby (M.B.A.); Scarborough (O.G.); Filey, May, 1913, test only (F.H.W.).

flavescens (Muell., O. F.)—Off Whitby (P.).

pennatifidum Nor.—Whitby, 30 fm. (M.B.A.).

BRISSOPSIS Agassiz, L.

lyrifera (Forbes)—Whitby, 30 fm. (M.B.A.); Robin Hood's Bay (L.W.).

Class HOLOTHUROIDEA — SEA CUCUMBERS

Order DENDROCHIROTA

Family CUCUMARIIDAE

CUCUMARIA Blairville

elongata Dueb. & Kor.—Scarborough, Sept., 1911 (J.I.).

THYONE Oken

roscovita Hér.—Specimen found 8 miles off Robin Hood's Bay, May, 1928, identified at British Museum (J.S.).

Family PSOLIDAE

PSOLUS Oken

phantapus (Struss.)—Occasionally trawled off coast, about 40 fm. (J.S.). Off Whitby, May, 1927; several taken off Scarborough, 1932 (A.W.).

Phylum BRYOZOA

Class ECTOPROCTA

Order GYMNOLAEMATA

Family AETEIDAE

AETEA Lamouroux

anguina (L.)—Scarborough (W.B.); Filey (T.H.).

Family SCRUPARIIDAE

SCRUPARIA Oken

chelata (L.) — Whitby on **Hydrallmania**, **Scrupocellaria** and **Delessaria**, 1900 (S.L.P.); Robin Hood's Bay (L.W.); Scarborough (W.B.); Filey on **Laminaria** and **Flustra foliacea**, in fair quantity, 1897 (S.L.P.).

EUCRATEA Lamouroux

loricata (L.)—Whitby and Bridlington Bay, 20 fm. (M.B.A.); Filey, 1897, amongst debris or on **Laminaria** (S.L.P.).

Family SCRUPOCELLARIIDAE

SCRUPOCELLARIA van Beneden

reptans (L.)—Whitby and Filey on **Flustra foliacea** (S.L.P.); Robin Hood's Bay, Scarborough (J.V.T.); Bridlington, abundant (G.R.V.).

scruposa (L.)—Whitby, 1900 (S.L.P.); Scarborough, 1901 (S.L.P.); Filey on **Flustra**, 1910 (S.L.P.).

CABEREA Lamouroux

ellisi (Flem.) (= **Cellularia hookeri**)—Common in deep water, especially on **Sertularia abietina** (J.S.).

TRICELLARIA Fleming

peachii (Busk)—Common in deep water, especially far out where it is picked up in the trawl, 1928 (J.S.); Robin Hood's Bay (L.W.).

ternata (Ell. & Sol.)—Scarborough in deep water on **Hydroids** and a valve of **Cytherea** (W.B.); Filey, very common on Zoophytes (T.H.).

Family BICELLARIELLIDAE

BICELLARIELLA Levinson

ciliata (L.)—Robin Hood's Bay (J.I.); Scarborough, common in deep water (J.S.); Filey, 1897 on **Bugula purpurotincta** (S.L.P.); Bridlington Bay on **Halecium halecium** (M.B.A.).

Family BUGULIDAE

BUGULA Oken

avicularia (L.)—Robin Hood's Bay (L.W.); Scarborough on stones (W.B.); occasionally trawled off coast (J.S.).

flabellata (Thomps.)—Robin Hood's Bay (J.I.); Scarborough, occasional (J.S.); Filey on **Flustra**, 1897 (S.L.P.).

plumosa (Pall.)—Bridlington Bay (M.B.A.); Scarborough.

turbinata Ald.—Scarborough, Sept., 1911 (J.I.); Filey, May, 1913 (F.H.W.).

purpurotincta Norm.—Scarborough (W.B.); Filey, 1910, on **Flustra** (S.L.P.).

DENDROBEANIA Levinson

murrayana Johnst. (= **Bugula m.**)—Off Whitby (S.L.P.); deep water off Scarborough (W.B.); Filey Brigg, Sept., 1909 (W.J.C.); often brought up by trawlers in inshore waters off Yorkshire coast (J.S.).

BEANIA Johnston

mirabilis Johnst.—Scarborough, on shells, rocks, **Bugula avicularia** (W.B.).

Family FLUSTRIDAE

FLUSTRA Linnaeus

foliacea (L.)—Whitby, 1900 (S.L.P.); Hayburn Wyke, 1891 (J.P.A.D.); Filey, 1897 (S.L.P.). Attached to rocks, shells, seaweed and even crabs; commonest animal in the district, found everywhere on the sea bottom off the coast—during September, 1925, shore at Filey covered for miles and in places 3in. deep—thousands of tons must have been washed up by the autumnal equinox gales (J.S.).

SECURIFLUSTRA Silen

securifrons (Pall.)—Whitby, 1910, on scars (S.L.P.); Scarborough (J.V.T.); Filey, 1897 (S.L.P.); Bridlington (M.B.A.).

CARBASEA Gray

carbacea (Ell. & Sol.)—Whitby, 20 fm. (M.B.A.); Scarborough, Filey (T.H.).

CHARTELLA Gray

papyracea (Ell. & Sol.)—Robin Hood's Bay (L.W.).

Family MEMBRANIPORIDAE

CONOPEUM Gray

reticulum (L.) (= **Membranipora lacroixi**)—Filey, May, 1903 (T.P.).

MEMBRANIPORA Blainville

membranacea (L.)—Whitby, Sept., 1899 on **Hydrallmania**, **Sertularia** and **Laminaria** (S.L.P.); Scarborough, Robin Hood's Bay (J.I.); Filey, 1897, on **Laminaria** (S.L.P.); common in both rock pools and deeper water, attached in particular to oar-weed (J.S.).

Family ELECTRIDAE

ELECTRA Lamouroux

pilosa (L.)—Whitby, 1910, on various seaweeds (S.L.P.); Robin Hood's Bay, Scarborough (J.I.); Filey, May, 1903 (T.P.); Bridlington (M.B.A.).

Family CALLOPORIDAE

CALLOPORA Gray

aurita (Hincks.)—Filey, May, 1903 (T.P.).*dumerili* (Aud.)—Bridlington, 10 fm. (M.B.A.).*lineata* (L.)—Filey, May, 1903 (T.P.).

TEGELLA Levinson

unicornis (Flem.)—Bridlington, 10 fm. (M.B.A.).

Family CELLARIIDAE

CELLARIA Lamouroux

fistulosa (L.)—Scarborough, 1892 (G.R.V.); abundant in 1928 but became scarce later (J.S.).*salicornioides* Aud.—Whitby, Sept., 1914 (F.H.W.); Scarborough (J.I.).

Family CRIBRILINIDAE

CRIBRILINA Gray

punctata (Hass.)—Filey, 1903 (T.P.).

MEMBRANIPORELLA Smitt

nitida (Johnst.)—Scarborough (W.B.).

Family UMBONULIDAE

UMBONULA Hincks

littoralis Hast.—Scarborough, 1892 (G.R.V.); Filey, May, 1903 (T.P.).*arctica* (Sars)—Whitby, 30 fm. (M.B.A.); Scarborough, 40 fm. (J.S.).

Family CHORIZOPORIDAE

CHORIZOPORA Hincks

brongniarti (Aud.)—Filey (T.Pen.).

Family SMITTINIDAE

SMITTINA Norman

landsborovi (Johnst.)—Scarborough (W.B.).

Family ESCHARELLIDAE

ESCHARELLA Gray

immersa (Flem.)—Filey, May, 1903 (T.P.).*variolora* (Johnst.)—Scarborough, deep water (W.B.).

Family HIPPOTHOIDAE

HIPPOTHOA Lamouroux

hyalina (L.)—Filey, May, 1903 (T.P.).

HAPLOTA Marcus

clavata (Hincks) (= *Eucratea clavata*)—Filey, abundant on *Crisidia**cornuta* (T.H.).

Family SCHIZOPORELLIDAE

SCHIZOMAVELLA Canu & Bassler

linearis (Hass.)—Filey, between tide marks (T.H.).

SCHIZOPORELLA Hincks

unicornis (Johnst.)—Filey, May, 1903 (T.P.).

Family CELLEPORIDAE

CELLEPORA Fabricius

pumicosa L.—Off Whitby (P.); Robin Hood's Bay (L.W.); Bridlington (M.B.A.); very common in deep water, generally attached to Hydroids (J.S.).

Family RETEPORIDAE

RETEPORA Imperato

beaniana King—Deep water off Scarborough (J.S.).

Family CRISIIDAE

CRISIDIA Milne-Edwards

cornuta (L.)—Filey, 1910, on *Sertularia abietina* (S.L.P.).

CRISIA Lamouroux

denticulata Milne-Edw.—Whitby, 1900, on *Hydrallmania* (S.L.P.); Robin Hood's Bay (L.W.); Scarborough (J.S.); Filey, 1910, on *Flustra foliacea* (S.L.P.).

eburnea (L.)—Whitby on *Flustra* and *Hydrallmania* (S.L.P.); Robin Hood's Bay, Scarborough (J.V.T.); Filey, May, 1913 (F.H.W.); Bridlington Bay (M.B.A.).

Family DIASTOPORIDAE

DIPLOSOLEN Canu

obelica (Johnst.)—Filey, 1910, on *Laminaria* (S.L.P.).

DIASTOPORA Lamouroux

patina (Lam.)—Robin Hood's Bay (L.W.); Bridlington, on boulders (M.B.A.).

Family TUBULIPORIDAE

TUBULIPORA Lamarck

liliacea (Pall.)—Whitby (T.P.); Filey on stones (W.B.); as common as *Cellepora* and found in same places (J.S.).

Family LICHENOPORIDAE

LICHENOPORA Defrance

hispida (Flem.)—Common in deep water attached to Hydroids (J.S.); Filey, May, 1903 (T.P.).

radiata (Aud.)—Bridlington Bay on *Hydrallmania falcata* (M.B.A.).

Family ALCYONIDIIDAE

ALCYONIDIUM Lamouroux

gelatinosum (L.)—On the bottom off Scarborough and Filey, attached to shells; once found on carapace of *Ebalia* and it was eight times as long and as thick, 1928 (J.S.).

hirsutum (Flem.)—Scarborough (J.V.T.); Filey, May, 1903 (T.P.).

parasiticum (Flem.)—Filey, 1913 (J.I.); common in deep water (J.S.).

Family FLUSTRELLIDAE

FLUSTRELLA Gray

hispida (Fab.)—Robin Hood's Bay, 1938 (Lab.).

Family VESICULARIIDAE

VESICULARIA Thompson

spinosa (L.)—Bridlington Bay (M.B.A.).

AMATHIA Lamouroux

lendigera (L.)—Robin Hood's Bay (L.W.); Filey (T.H.).

BOWERBANKIA Farre

imbricata (Adams)—Filey, May, 1903 (T.P.).

Family BUSKIIDAE

BUSKIA Alder

nitens Ald.—Whitby (T.H.).

Family NOLELLIDAE

ANGUINELLA van Beneden

palmata van Ben.—Filey, between tide marks (T.H.).

Family VALKERIIDAE

VALKERIA Fleming

tremula Hincks—Scarborough, 1911 (A.T.W.).

Class ENTOPROCTA

Family PEDICELLINIDAE

PEDICELLINA Sars

cernus (Pall.)—Robin Hood's Bay (L.W.); Scarborough (J.I.);
Filey, May, 1903 (T.P.).

BARENTSIA Hincks

gracilis (Sars)—Filey, May, 1903 (T.P.).

Phylum CHAETOGNATHA

SAGITTA Quoy & Gaimard

bipunctata Quoy & Gaim.—Flamborough, 20 fm., very common
(V.H.Y.).

Phylum PHORONIDEA

PHORONIS Wright

sp.—*Actinotroch* larva, Robin Hood's Bay, taken in three successive
years (1921-23) during second half of August (E.P.).

Sub-phylum TUNICATA — SEA SQUIRTS

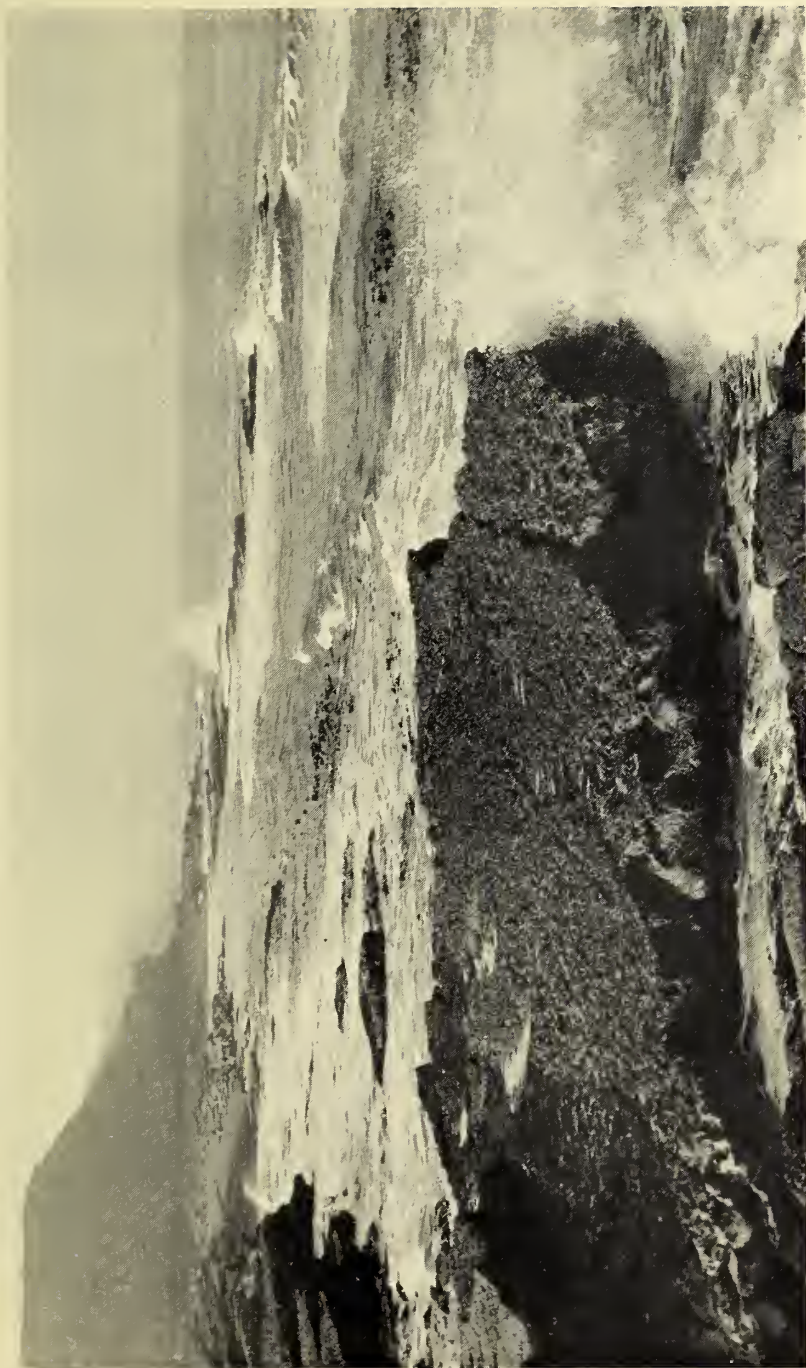
Class ASCIDIACEA—SESSILE TUNICATES

Order ENTEROGONA

Family POLYCLINIDAE (=SYNOICIDAE)

POLYCLINUM Savigny

aurantium Milne-Edw.—Cornelian Bay, Sept., 1919 (J.I.).



FILEY BRIGG

Photograph : Jane Bown

- SYNOICUM** Phipps
pulmonaria (Ell. & Sol.)—Scarborough, Filey, Sept., 1913 (J.I.).
APLIDIUM Savigny
nordmanni (Milne-Edw.)—Robin Hood's Bay, Sept., 1927 (Lab.).
SIDNYUM Savigny
turbinatum (Sav.)—Scarborough, June, 1924, Filey Brigg, Aug., 1920 (A.J.B.).

Family DIDEMNIDAE

- DIDEMNUM** Savigny
maculosum (Milne-Edw.)—Scarborough, Sept., 1919 (J.I.).
DIPLOSOMA MacDonald
listerianum (Milne-Edw.)—Scarborough, Robin Hood's Bay, Sept., 1921 (J.I.).

Family CIONIDAE

- CIONA** Fleming
intestinalis (L.)—Robin Hood's Bay, May, 1922 (E.P.); Scarborough, trawled (W.J.C.); off Flamborough, 20 fm. (M.B.A.).

Family ASCIDIIDAE

- ASCIDIA** Linnaeus
mentula (Muell., O. F.)—Scarborough, 1922 (J.I.); Cornelian Bay, Sept., 1914, Filey, May, 1913 (F.H.W.).
virginea (Muell., O. F.)—Locally "GRAPES", Bridlington Bay, off Flamborough (M.B.A.).

Order PLEUROGONA

Family STYELIDAE

- DENDRODOA** Macleay
grossularia (van Ben.)—SEA GOOSEBERRY. Cornelian Bay, Sept., 1919; Filey, Sept., 1913 (J.I.).
STOLONICA Lacaze-Duthiers & Delage
socialis Hart—Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough (J.I.).
BOTRYLLUS Gaertner
schlossen (Pall.)—STAR SEA SQUIRT. Common, Robin Hood's Bay, Oct., 1912 (F.H.W.); Scarborough, 1910, Cornelian Bay (J.I.); Filey, May, 1913 (F.H.W.); Whitby (30 fm.), Flamborough (20 fm.) (M.B.A.).
rubens Ald. & Han.—Robin Hood's Bay, Scarborough (J.I.); Filey, May, 1913 (F.H.W.).
BOTRYLLOIDES Milne-Edwards
leachi (Sav.)—Robin Hood's Bay, Sept., 1921, Scarborough, Sept., 1919 (J.I.); Filey, May, 1913 (F.H.W.).

Family MOLGULIDAE

- MOLGULA** Forbes & Hanley
citrina Ald & Han.—Robin Hood's Bay, Sept., 1937 (N.B.E.).

Class LARVACEA — PELAGIC TUNICATES

Order COPELATA

OIKOPLEURA Mertens

dioica Fol.—Flamborough, 20 fm., rare (V.H.Y.).

FRITILLARIA Quoy & Gaimard

borealis Lohm.—Flamborough, 20 fm. (V.H.Y.).

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Danielssenia	32	Filograna	29	Janira	35
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Dendrobeania	69	Flustra	69	Jorunna	61
Dendrodoa	73	Flustrella	71		
Dendronotus	61	Fritillaria	74	Kefersteinia	25
Dentalium	63			Kellia	46
Dermatomyzon	33	Galathea	38	Kirchenpaueria	19
Dexamine	36	Gammarus	36	Krithe	30
Diaphana	59	Gammarellus	36		
Diastopora	71	Gari	48	Lacuna	52
Didemnum	73	Gibbula	51	Lafoea	17
Diphasia	18	Goniade	26	Lagena	12
Diplosolen	71	Goniodoris	61	Lagisca	24
Diplosoma	73	Gonothyraea	17	Lamellaria	55
Discorbina	13	Glycera	26	Lanice	28
Donax	47	Glycymeris	43	Laodicea	19
Dosinia	46	Grantia	14	Laomedeia	17
Doto	62	Graphis	54	Laophonte	32
Dynamena	18			Lasaea	46
Dysidea	15	Halecium	17	Leander	38
Dyspontius	33	Halichrondia	15	Lepas	34
		Haliclona	14	Lepeophtheirus	33
Ebalia	41	Haliclystus	20	Lepeta	51
Echinocardium	67	Halicyclops	33	Lepidochitona	43
Echinocyamus	67	Halisarca	15	Lepidonotus	24
Echinochila	61	Halosydna	24	Lepidopleurus	42
Echinus	67	Hanleya	42	Leptocythere	30
Electra	69	Haplota	70	Lepton	46
Eledone	64	Harmothoe	24	Leptoplana	22
Eleutheria	16	Harpacticus	32	Lernaecocera	33
Elysia	60	Haustorius	36	Leuconia	14
Emarginula	50	Hemicythere	30	Leucophytia	63
		Henricia	66	Leucosolenia	14

Lichenopora	71	Nucella	56	Pinnotheres	41
Lichomolgus	33	Nucula	43	Pirimela	40
Ligia	35	Nuculana	43	Planorbulina	13
Lima	45	Nymphon	42	Platynereis	26
Limacia	60			Plumularia	19
Limapontia	60	Obelia	17	Podocerus	36
Limnoria	35	Ocenebra	56	Podocoryne	16, 19
Lineus	23	Odostomia	58	Polycera	60
Liomesus	56	Oerstedtia	23	Polycirrus	28
Lithodes	39	Oikopleura	74	Polyclinum	72
Littorina	52	Oithona	33	Polydora	26
Loligo	64	Okenia	61	Polymastia	15
Lora	57	Omalogyra	53	Polymnia	28
Loripes	45	Ommastrephes	63	Polymorphina	13
Loxoconcha	31	Onchidoris	61	Polynoe	24
Lucernaria	20	Opercularella	18	Polystomella	13
Luidia	65	Operculina	13	Pomatoceros	29
Lutraria	49	Ophelia	27	Pontobdella	29
Lyonsia	50	Ophiocomina	66	Porcellana	39
		Ophiopholis	66	Portumnus	40
Macoma	48	Ophiothrix	66	Portunus	40
Macropodia	41	Ophiura	66	Potamilla	28
Mactra	48	Ophlitaspongia	15	Praunus	37
Maia	41	Orchestia	36	Priapulus	29
Mangelia	57	Oscarella	14	Proclymene	27
Margarites	51	Ossiania	59	Psammechinus	67
Marginulina	13	Ostrea	44	Pseudanthessius	33
Marinogammarus		Otina	63	Pseudocythere	31
	36	Owenia	27	Pseudoprotella	37
Massilina	12	Pachydrilus	29	Pseudosuberites	15
Membranipora	69	Palinurus	38	Psolus	68
Membraniporella		Pandalina	37	Ptychocypris	13
	70	Pandalus	37	Pulvinulina	13
Menestho	58	Paracytherois	31	Puncturella	50
Metridium	21	Paradoxostoma	31	Pycnogonum	42
Miliolina	12	Paramysis	37		
Modiolus	44	Parapontella	31	Raspailia	15
Molgula	73	Parathemisto	37	Retepora	71
Monia	44	Patella	50	Retusa	59
Montacuta	46	Patelloida	50	Rhizothrix	32
Munida	39	Patina	50	Rhynchothalestris	
Musculus	44	Pecten	45		32
Mya	49	Pectinaria	27	Rissoa	53
Mysella	46	Pedicellina	72	Rossia	64
Mysia	47	Pelseneeria	54	Rotalia	13
Mytilus	44	Peltogaster	34	Roxania	59
Myxicola	28	Pennatula	21		
Myxilla	15	Perinereis	25	Sabella	28
		Phacoides	45	Sabellaria	27
Nassarius	56	Phascolion	29	Sacculina	34
Natica	55	Phascolosoma	29	Sagartia	22
Nemertesia	19	Phialella	20	Sagitta	72
Nephrops	38	Phialidium	20	Sagittatus	64
Nephthys	26	Philbertia	57	Sarcodictyon	20
Neptunea	56	Philocheras	38	Sarsia	16, 19
Nereis	25	Phoronis	72	Saxicavella	49
Nerine	26	Phoxichilidium	42	Scalissetosus	24
Nicolea	28	Phyllodoce	24	Scalpellum	34
Nonionina	13	Phytia	63	Schizomavella	70
Notomastus	27	Pilumnus	41	Schizoporella	70

Schizotricha	19	Talitrus	36	Tubulipora	71
Scolecopsis	26	Tealia	21	Turbonilla	58
Scoloplos	26	Tegella	70	Turritella	53
Scrobicularia	48	Tellina	47	Turtonia	46
Scruparia	68	Temora	31		
Scrupocellaria	68	Teredo	49		
Scyllaea	61	Tetilla	14		
Securiflustra	69	Tetrastemma	23	Umbonula	70
Sepia	64	Textularia	12	Upogebia	39
Sepietta	64	Thalestris	32		
Sepiola	64	Thelepus	28		
Serpula	28	Thoralus	38		
Sertularia	18	Thracia	50	Vaginulina	13
Sertularella	18	Thujaria	19	Valkeria	72
Sidnyum	73	Thyasira	45	Velutina	55
Sigalion	24	Thyone	67	Venerupis	41
Skenea	52	Thysanozoon	22	Venus	47
Skeneopsis	53	Tiaropsis	20	Verneuilina	12
Smittina	70	Tintinnopsis	13	Verruca	34
Solaster	65	Tisbe	32	Vesicularia	72
Spatangus	67	Todaropsis	64	Virgularia	21
Sphenia	49	Tomopteris	25	Volutopsius	56
Spinther	24	Tonicella	42		
Spiratella	59	Tornus	53		
Spiroculina	11	Trachyleberis	31		
Spirontocaris	38	Tricellaria	68	Xenocythere	30
Spirorbis	29	Trichotropis	54	Xestoleberis	31
Spisula	48	Trinchesia	62	Xylophaga	49
Stenhalia	32	Tritonia	60		
Sthenelais	24	Trivia	55		
Stolonica	73	Trophon	55	Yoldiella	43
Stylarioides	27	Troschelia	57		
Suberites	15	Truncatulina	13		
Sycon	14	Trypanosyllis	25		
Syllis	25	Tubulanus	23	Zaus	32
Synoicum	73	Tubularia	16	Zirfaea	49

FRESHWATER INVERTEBRATES

Joan R. Kemp

Although in the past the Scarborough Field Naturalists' Society has had recorders of freshwater life, the actual records of most of the groups are meagre. W. H. Newlove however worked for many years on the Rotifers in particular and the great majority of the considerable number of records of this group are taken from his admirably illustrated record-book. Most, if not all, of his identifications were confirmed by David Bryce.

Many living organisms found in freshwater are products of what is at times a difficult environment, one that may dry up in summer and freeze over in winter. There is inevitably a keen struggle for existence which demands much adaptation and flexibility of form. Man also is exerting an increasing influence on freshwater life. From the earliest days he has striven, not always with success, to keep water within defined limits by means of drainage and flood-barriers.

The areas of freshwater in the Scarborough district may be sub-divided as follows :—

(a) Scarborough and Throxenby Meres. The former has served for centuries as a drainage sump for the surrounding higher land and eventually drains out to the sea via the Valley. Scarborough Mere has frequently been stocked with fish (perch, carp, roach, tench, bream, trout and pike) by the Scarborough Corporation, and is often used for angling festivals, but the fish caught have to be returned alive to the water. Owing to the depredations of the pike and the resulting deterioration of the fishing, considerable numbers of this fish were removed by trapping in 1954 and by netting in 1955. Beneath the silt of the bottom is a layer of peat several feet thick. The Mere was greatly enlarged, indeed more than doubled, around 1912, its boundary before this development took place being the line of islands on the western side and then southwards as far as the bridge.

Throxenby Mere appears to have had a varied existence. The Ordnance Survey map of 1854 shows it as much smaller than its present-day size but in 1926 the lower end was dammed and the water-level raised. People still alive (1955) remember the site as a meadow but the mere appears on a plan attached to the Scalby Award, dated 1777. Fifty years ago skating was possible in the winter but about that time the bogbean appeared and rapidly became dominant. This plant forms floating rafts four or five feet thick on which such plants as alder, willow and purple loosestrife become established. So dense is the plant growth (bogbean, yellow-flag, reedmace, marsh-horsetail, water-plantain, etc.) that the oxygen content of the water is seriously depleted at night and the carbon dioxide correspondingly increased. This probably accounts for the almost complete absence of fish in Throxenby Mere.

(b) The Carrs with their system of drainage ditches centred on the Hertford River and emptying into the Derwent near Yedingham. The special act enabling the Drainage Board to carry out this work was passed in 1800.

(c) Moorland pools of stagnant water with a high humus-acid content, together with the streams, often mere trickles, associated with them. These have a characteristic insect fauna consisting largely of certain coleoptera (*Hydroporus* and *Agabus* spp.) and hemiptera (*Corixa* spp.). An outstanding moorland pool is the so-called Volvox Pond on Seamer Moor, by the right-hand side of the old trackway leading from Throxenby Mere to Ayton. This pool was often cloudy with myriads of Volvox colonies but they have not been recorded there since the pond was pumped dry during a nearby fire.

(d) Moorland streams of quick-flowing and well-oxygenated water, becoming rather slower as they near the Vale of Pickering. The River Derwent is the main stream of this group but others are to be found in many moorland valleys.

(e) The quick-flowing streams springing from the base of the Wolds and draining into the Carrs. These streams are clear, cool and with a high calcium content. It is convenient to associate with these such limestone springs as those which feed the ponds at Brompton, Allerston, etc.

(f) The large artificial pools at Hackness, Scampston and Ellerburn. Surprisingly little collecting has been done from these waters.

(g) The drainage area of the Stepney and Woodlands districts just to the west of Scarborough. This drains, via a little stream in Woodland Ravine and a culvert, into Peasholm Glen and Lake and thus into the sea. This system carries the water from the fields, farms and gardens lying to the east of Seamer Moor. In wet years such as 1954, this water is very turbid and drains away rapidly; in dry years such as 1955, it drains away slowly and the little pools in Peasholm Glen then contain a good deal of blue-green algae (*Cyanophyceae*), indicating a high organic-nitrogen content. This is not sufficient however to pollute Peasholm Lake or to cause injury to the large mussels (*Anodonta*) found there.

In the Scarborough district there is no major problem of sewage-pollution of inland waters. The larger towns, Scarborough, Whitby and Filey, being situated on the coast, convey their sewage directly into the sea. There are small modern sewage-disposal schemes at Pickering, Malton and for the Seamer district, but there is a measure of contamination in the vicinity of the villages and the isolated farm-houses. A small amount of sewage-pollution, acting as additional food material, favourably effects most freshwater life, but a gross contamination, because of its reducing nature and the resulting de-oxygenising of the water, causes a dramatic diminution of both fauna and flora. Scarborough Mere occasionally becomes polluted, the source of the trouble on one occasion at least being found to be the stream flowing down Edge Dell. This pollution caused much damage to the

freshwater life of the Mere, especially to the large swan-mussels (*Anodonta cygnea*). This source of pollution has now ceased but the mussels have not reappeared. No contamination could be traced to the very large quantities of town refuse which had been tipped on the western banks of the Mere in 1912 and again between 1923 and 1937. To prevent such contamination a stout puddle clay wall was built to separate the tipping area from the water.

Several phyla other than those dealt with in this section have representatives in freshwater and they are referred to below. It may be helpful to outline the system of classification followed :—

Phylum PROTOZOA

- „ PORIFERA—Sponges
- „ COELENTERATA
- „ PLATYHELMINTHES—Flatworms
- „ ROTIFERA—Wheel Animalcules
- „ NEMATODA—Roundworms
- „ ANNELIDA—HIRUDINEA—Leeches
- „ ARTHROPODA

Class CRUSTACEA

- „ TARDIGRADA
- „ ARACHNIDA—Water-mites p. 334
Spiders p. 318

„ INSECTA

- COLLEMBOLA—Springtails p. 100
- PLECOPTERA—Stoneflies p. 104
- EPHEMEROPTERA—Mayflies p. 115
- ODONATA—Dragonflies p. 116
- HEMIPTERA—Waterbugs p. 119
- NEUROPTERA—Alderflies p. 140
- TRICHOPTERA—Caddisflies p. 142
- LEPIDOPTERA—Aquatic Moths p. 146
- COLEOPTERA—Beetles p. 196
- HYMENOPTERA—Ichneumon Flies p. 274
- DIPTERA—True Flies p. 288

„ MOLLUSCA, p. 336

Sincere thanks are due to Mr. M. D. Pittam of the Lister Institute of Preventive Medicine, London, for constant help and advice.

The following abbreviations are used :—

- | | |
|----------------------|--------------------------------------|
| T.B.—T. Brewster. | E.F.G.—E. F. Gilmour. |
| J.M.B.—J. M. Brown. | Y.N.U.—Yorkshire Naturalists' Union. |
| W.J.C.—W. J. Clarke. | G.B.W.—G. B. Walsh. |
| G.F.—G. Fryer. | H.W.—H. Whitehead. |

Phylum PROTOZOA

The classification followed is set out in "Protozoology", Hall, 1953 (Prentice-Hall, New York) and is based on that of Jahn and Jahn, 1949.

The following species have been recorded from the Scarborough district.

Subphylum MASTIGOPHORA**Class PHYTOMASTIGOPHORA****Order PHYTOMONADIDA****Family PHACOTIDAE**

Phacus pleuronectes (Muell., O.F.)

Family VOLVOCIDAE

Volvox globator (L.)

Order EUGLENIDA**Family EUGLENIDAE**

Euglena viridis Ehr.

Euglena pleuronectes, this record possibly refers to ***E. pisciformis*** Klebs.

Subphylum SARCODINA**Class ACTINOPODEA****Order HELIOZOIDA****Family ACTINOPHYRIDAE**

Actinophrys sol Ehr.

Class RHIZOPODEA**Order AMOEBIDA**

Amoeba diffluens, it is likely that this record refers to ***A. proteus*** (Pall.).

Order TESTACIDA**Family ARCELLIDAE**

Arcella vulgaris Ehr.

Cryptodifflugia oviformis Pen.

Hyalosphaenia papilio Leidy

Family DIFFLUGIIDAE

Amphitrema flavum Arch.

Centropyxis aculeata Stein

Difflugia oblonga Ehr.

Heleopera petricola Leidy

Family EUGLYPHIDAE

Assulina seminulum Ehr.

Corythion dubium Tar.

Euglypha strigosa Ehr.

Nebela lincta Leidy

Nebela collaris Ehr.

Nebela flabellum Leidy

Nebela militaris Pen.

Trinema enchelys Ehr.

Trinema lineare Pen.

Subphylum CILIOPHORA

Class CILIATEA

Order HOLOTRICHIDA

Family AMPHILEPTIDAE

Amphileptus fasciola, this record probably refers to *Lionotus fasciola* (Ehr.)

Family COLEPIDAE

Coleps hirtus (Muell., O. F.)

Family HOLOPHRYIDAE

Prorodon marginatus

Family LOXODIDAE

Loxodes rusticum

Loxodes rostrum Ehr.

Family TRACHELIIDAE

Trachelius ovum Ehr.

Family PARAMECIIDAE

Paramecium caudatum Ehr.

Paramecium aurelia Ehr.

Family PLEURONEMATIDAE

Pleuronema chrysalis Stein

Order SPIROTRICHIDA

Family BURSARIIDAE

Bursaria sp.

Family STENTORIDAE

Stentor coeruleus Ehr.

Stentor polymorphus (Muell., O. F.)

Stentor muelleri (Bory)

Family EUPLOTIDAE

Euplotes patella (Muell., O. F.)

Family OXYTRICHIDAE

Kerona mytilus (Muell., O. F.)

Kerona polyporum Ehr.

Order PERITRICHIDA

Family VAGINICOLIDAE

Cothurnia imberbis Ehr.

Vaginicola crystallinus Ehr.

Family VORTICELLIDAE

Vorticella microstoma Ehr.

Vorticella convallaria (L.)

Carchesium foetidum

Phylum PORIFERA

The classification followed is set out in "The Invertebrates", Vol. 1, Hyman, 1940, and is based on the publications of Topsent, H. V. Wilson and de Laubenfels.

Class DEMOSPONGIAE

Family SPONGILLIDAE

- Ephydatia fluviatilis** Lam.—RIVER SPONGE. On planks in Scalby Beck near Burniston Road bridge, occurring in quantity (G.B.W.).
Euspongilla lacustris L.—POND SPONGE. In dripping water at Bready Gill, Lowdales (G.B.W.).

Phylum COELENTERATA

The classification as set out in "The Invertebrates", Vol. 1, Hyman, 1940.

Class HYDROZOA

Family HYDRIDAE

- Hydra viridis** L. (= **Chlorohydra viridissima** (Pall.))—Common in local waters.
Hydra fusca L. (= **Pelmatohydra oligactis** (Pall.))—Has occurred in the Valley Pond.

Phylum PLATYHELMINTHES

Classification follows Kuekenenthal & Krumbach "Handbuch der Zoologie", Bd. 2, H.1 (1928-1934).

Class TURBELLARIA

Family PLANARIIDAE

- Crenobia alpina** (Dana) (= **Planaria**)—Cliff Beck, Saltergate, 1929, Ramsdale Beck, 1933 (J.M.B.); chalk stream, Flixton, 1943 (H.W.).
Polycelis felina (Dalyell) (= **cornuta** (Johnst.))—Row Pasture Beck, Robin Hood's Bay, 1933 (J.M.B.).
Polycelis nigra (Muell., O. F.)—Newtondale, 1929 (J.M.B.); Throxenby Mere, Low North Beck, Hills Green (G.B.W.).

Family DENDROCOELIDAE

- Dendrocoelum lacteum** (Muell., O. F.)—Pool on Seamer Moor (E.F.G.); Throxenby Mere, Low North Beck, Hills Green (G.B.W.).

Phylum ROTIFERA

The following list of records of the Rotifera is based almost entirely on the record-book of W. H. Newlove, whose collections were made between 1924 and 1935. A few earlier records by Dr. J. Harvey, A. E. Winter, D. W. Bevan and others are included. Newlove used the nomenclature and classification of Hudson and Gosse, *The Rotifera*, 1886.

The nomenclature used below is based on Haring (1913) as modified in more recent papers by Haring himself (1914), Haring and Myers (1922 to 1928), Myers (1930), Ahlstrom (1941, 1943) and Carlin (1939, 1943).

The arrangement follows that of Remane (1929, etc.). Grateful thanks are due to Prof. E. A. Spaul and to Mr. A. L. Galliford for their invaluable help in adjusting the nomenclature.

Family PHILODINIDAE

PHILODINA Ehrenberg

citrina Ehr.—Common in tanks and troughs, 1893 (J.H.); Throxenby Mere, 1925 (W.H.N.).

megalotrocha Ehr.—Horse trough, Cayton 1896 (J.H.).

ROTARIA Scopoli

neptunia (Ehr.)—Many records.

tardigrada (Ehr.)—Suffield reed pond, 1926 (W.H.N.).

macrura (Ehr.)—Seamer Moor pond (W.H.N.).

rotatoria (Pallas) (= *Rotifer vulgaris* Schrank)—Many records.

DISSOTROCHA Bryce (= **PHILODINA** Ehrenberg in part)

aculeata (Ehr.)—Throxenby Mere, 1925 (W.H.N.).

PLEURETRA Bryce (= **CALLIDINA** Ehrenberg in part, **PHILODINA** Ehrenberg in part)

brycei (Weber)—Moss in waterfall at Levisham mill, 1926 (W.H.N.).

segmentata Bryce—Limestone wall, Ayton, 1930 (*det.* D. Bryce).

Second British record, having previously been recorded only from Snowdon.

Family PHILODINAVIDAE

PHILODINAVUS Haring (= **MICRODINA** Murray)

paradoxus (Murray)—Moss in waterfall at Levisham mill, 1929 (*det.* E. A. Harris), a rare species (W.H.N.).

Family BRACHIONIDAE

EPIPHANES Ehrenberg (= **NOTOPS** Hudson in part)

brachionus (Ehr.)—Recorded but no station given (W.H.N.).

senta (Mueller)—Many records, Newby, Ayton, Suffield (W.H.N.).

MIKROCODIDES Bergandal (= **STEPHANOPS** Ehrenberg in part)

chlaena (Gosse)—Throxenby Mere, 1925 (W.H.N.).

BRACHIONUS Pallas

calyciflorus Pallas (= *pala* Ehr.)—Wheatcroft pond, 1925 (W.H.N.).

- PLATYIAS** Harring (=NOTEUS Ehrenberg)
quadricornis (Ehr.)—Ayton mill-dam (W.H.N.).
- KERATELLA** Bory de St. Vincent (=ANURAEA Gosse)
quadrata (Mueller) (*Anuraea aculeata* Ehr.)—Robin Hood's Bay Moor, 1925 (W.H.N.).
cochlearis (Gosse)—Ayton mill-dam (W.H.N.).
serrulata (Ehr.)—Robin Hood's Bay Moor, 1925 (W.H.N.).
- NOTHOLCA** Gosse
striata (Mueller)—Stepney Road, Scarborough (W.H.N.).
 N.B.—Carlin (1943) considers that the name *N. striata* should refer only to a brackish-water form not known to occur in freshwater. Freshwater forms formerly described under this name are now divided into the species *N. squamula* (Mueller), *N. acuminata* (Ehr.), *N. labis* (Gosse), *N. cinctura* Skorikov; some of these species also occur in brackish waters.
- EUCHLANIS** Ehrenberg
dilatata Ehr.—Cloughton (W.H.N.).
incisa Carlin (=unisetata Leydig)—Seamer Moor (W.H.N.).
pyriformis Gosse—Ayton (W.H.N.).
- MYTILINA** Bory de St. Vincent (=SALPINA Ehrenberg)
ventralis (Ehr.)—Seamer Moor Volvox pond, 1926 (W.H.N.).
- LOPHOCHARIS** Ehrenberg
salpina Ehr.—Throxenby Mere (W.H.N.).
- DIPLOIS** Gosse
daviesiae Gosse—Ayton, 1927, Thornton-le-Dale, 1934 (W.H.N.).
- TRICHOTRIA** Bory de St. Vincent (=DINOCHARIS Ehrenberg)
tetractis (Ehr.)—Row Brow Farm, 1926 (W.H.N.).
- LEPADELLA** Bory de St. Vincent (=METOPIDIA Ehrenberg)
triptera Ehr.—Throxenby Mere, 1925 (W.H.N.).
- SQUATINELLA** Bory de St. Vincent (=STEPHANOPS Ehrenberg in part)
mutica (Ehr.)—Throxenby Mere, 1925 (W.H.N.).
longispinata (Tatem)—Dundall pond, Levisham, 1926 (W.H.N.).
- COLURELLA** Bory de St. Vincent (=COLURUS Ehrenberg)
obtusa (Gosse)—Seamer Moor Volvox pond (W.H.N.).
- LECANA** Nitzsch (=DISTYLA Eichwald in part and CATHYPNA Gosse)
flexilis (Gosse)—In a tank in Lawrence's nursery, Scarborough, 1926 (W.H.N.).

Family NOTOMMATIDAE

- NOTOMMATA** Ehrenberg
aurita (Mueller)—Gallows Close pond, 1895 (J.H.).
pachyura (Gosse)—Ditch near Scalby Road, 1895 (J.H.).
cerberus (Gosse)—Scarborough, in water in which roses had been kept, 1925 (W.H.N.).
- TAPHROCAMPA** Gosse
annulosa Gosse—Seamer Moor Volvox pond (W.H.N.).

CEPHALODELLA Bory de St. Vincent (= **DIGLENA** Ehrenberg in part and **DIASCHIZA** Gosse)

auriculata (Mueller) (**Notommata lacinulata** Ehr.)—Scarborough Mere and Gallows Close pond, 1895 (J.H.).

catellina (Mueller)—Many records.

MONOMMATA Bartsch

longiseta (Mueller) (= **Notommata longiseta** Ehr.)—Throxenby Mere, 1925 (W.H.N.).

SCARIDIUM Ehrenberg

longicaudum (Mueller) — Ayton, 1930, Thornton-le-Dale, 1934 (W.H.N.).

EOTHINIA Harring & Myers (= **EOSPHORA** Ehrenberg in part)

elongata (Ehr.)—Thornton-le-Dale, 1926, *det.* D. Bryce (W.H.N.).

Family TRICHOCERCIDAE

TRICHOCERCA Lamarck (= **MONOCERCA** Bory de St. Vincent and **MASTIGOCERCA** Ehrenberg)

rattus (Mueller)—Throxenby Mere, 1925 (W.H.N.).

cristata Harring (= **Mastigoverca carinata** Ehr.)—Seamer Moor Volvox pond, 1928 (W.H.N.).

longiseta (Schrank) (= **bicornis** Ehr.)—Recorded and specimen drawn, but no station given (W.H.N.).

stylata (Gosse)—Raincliffe Wood pond, 1925 (W.H.N.).

Family GASTROPODIDAE

GASTROPUS Imhof (= **NOTOPS** Hudson in part)

minor (Rouss)—Throxenby Mere, 1926 (W.H.N.), *confd.* D. Bryce.

hyptopus (Ehr.)—Throxenby Mere, 1925; believed to be a male though Gosse says males are unknown (W.H.N.).

Family DICRANOPHORIDAE

DICRANOPHORUS Nitsch (= **DIGLENA** Ehrenberg in part)

forcipatus (Mueller)—Gallows Close pond, 1895 (J.H.)

Family ASPLANCHNIDAE

ASPLANCHNA Gosse

brightwelli Gosse—Newby, 1896 (J.H.).

sieboldi (Leydig) (= **ebbesborni** Hudson) — Newby, 1901, 1906 (J.H.).

Family SYNCHAETIDAE

SYNCHAETA Ehrenberg

pectinata Ehr.—Suffield reed pond (W.H.N.).

POLYARTHRA Ehrenberg

trigla Ehr. (= **platyptera** Ehr.)—Throxenby Mere, 1925 (W.H.N.).

N.B.—In a recent revision (1943) Carlin has divided this species into several:—**P. vulgaris** Carlin, **P. dolichoptera** (Idelson), **P. ramata** (Skorikov), **P. major** (Burckhardt) and **P. minor** (Voigt). It is not possible to tell to which of these species the above record refers.

Family TESTUDINELLIDAE

- TESTUDINELLA** Bory de St. Vincent (= **PTERODINA** Ehrenberg)
patina (Hermann)—Seamer Moor Volvox pond, 1925, Throxenby Mere, 1926 (W.H.N.).
elliptica (Ehr.)—Wheatcroft pond, 1925, Ayton mill-dam, Suffield (W.H.N.).
reflexa (Gosse)—Suffield reed pond, 1925 (W.H.N.).
FILINIA Bory de St. Vincent (= **TRIARTHRA** Ehrenberg)
longiseta (Ehr.)—Wheatcroft pond, 1926-7 (W.H.N.).

Family FLOSCULARIIDAE

- PTYGURA** Ehrenberg (= **OECISTES** Ehrenberg)
crystallina (Ehr.)—Scarborough Mere, 1895 (J.H.); Lockton pond, 1926-29 (W.H.N.).
longipes (Wills) (= *umbella* Hudson) — Ayton mill-dam, 1925 (W.H.N.).
pilula (Cubitt)—Ayton mill-dam, 1925 (W.H.N.).
FLOSCULARIA Cuvier (= **MELICERTA** Schrank, not **FLOSCULARIA** Ehrenberg)
conifera (Hudson)—Scarborough Mere, 1895 (J.H.).
ringens (L.)—Many records.

Family COLLOTHECIDAE

- COLLOTHECA** Harring (= **FLOSCULARIA** Ehrenberg)
cornuta (Dobie)—Seamer Moor, 1925 (W.H.N.). Now regarded as a variety of *C. ornata*.
ornata (Ehr.)—Seamer Moor, 1895, 1918 (A.E.W.).
campanulata (Dobie)—Scarborough Mere, 1895 (J.H.).
algitola (Hudson)—Seamer Moor Volvox pond, 1920 (W.H.N.).
ambigua (Hudson)—Seamer Moor Volvox pond, 1920 (W.H.N.).
annulata (Hood)—Seamer Moor Volvox pond, 1926, det. D. Bryce (W.H.N.).
STEPHANOCEROS Ehrenberg
fimbriatus (Goldfuss) (= *eichhorni* Ehr.)—Seamer Moor, 1919 (A.E.W.); Ayton mill-dam, 1927, Brickyard Farm pond, Pickering, 1934 (W.H.N.).

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LXXVII, pp. 143-184.
1943. "Revision of KERATELLA", Ibid,
LXXX, pp. 411-457.

Phylum NEMATODA

Family ANGUILLULIDAE

Anguillula fluviatilis (Muell., O. F.)—Scarborough Mere, 1890 and
1918 (A. E. Winter).

Phylum NEMATOMORPHA (GORDIACEA)—HAIRWORMS

Gordius villoti (Rosa) (=aquaticus)—Quite common.

Phylum ANNELIDA

Class HIRUDINEA

The following list has been compiled from the following sources :—

1. H. Whitehead, Fresh-water Leeches of Yorkshire, Naturalist, 1943,
pp. 107-108.
ibid., Yorkshire Naturalists at Scarborough, Naturalist, 1943,
p. 123.
ibid., The Medicinal Leech at Randy Mere, Naturalist, 1949, p. 20.
2. Observations by D. J. Price and G. B. Walsh.

RHYNCHOBDELLIDAE

Piscicola geometra (L.)—COMMON FISH LEECH. Scarborough
Mere (W. J. Clarke). Whitehead's reference to its capture by
Clarke on a trout in the Derwent, Naturalist, 1912, p. 303, should
be amended to read "p. 191".

Glossosiphonia complanata (L.)—GREATER SNAIL LEECH. River
Derwent at Wrench Green (G.B.W.); in a sluggish ditch near
Scarborough. Probably common and generally distributed.

Helobdella stagnalis (L.)—Throxenby Mere (G.B.W.).

GNATHOBDELLIDAE

Haemopsis sanguisuga (L.)—HORSE LEECH. W. J. Clarke says it used to be common in Scarborough Mere and neighbouring ponds and not now widely distributed. However, I have found it common enough in Throxenby Mere and in many other ponds (G.B.W.).

Hirudo medicinalis L.—MEDICINAL LEECH. At one time it was believed to be extinct in Yorkshire, but it has been taken in Fen Bog, near Goathland (H.W.), and it is said to occur in marshy tracts near Wheeldale Gill, but search for it there has so far proved fruitless.

Herpobdella (*Nepheleis*) **octoculata** (L.)—In the Hertford River near Flixton (H.W.).

Phylum ARTHROPODA

Class CRUSTACEA

The classification followed is that of Calman, "Oxford Treatise of Zoology", 1909.

Subclass BRANCHIOPODA

Order ANOSTRACA

Eubbranchipus vermalis Ber.—FAIRY SHRIMP. Reported by W. H. Newlove in 1934, station uncertain.

Subclass COPEPODA

Order EUCOPEPODA

Cyclops vernalis Fisch.—Very dark specimens found with *C. languidus* near Goathland in sphagnum swamp (G.F.).

Cyclops languidus Sars—With the above (G.F.).

Subclass MALACOSTRACA

Order ISOPODA

Asellus meridianus Racov.—WATER LOUSE. Randy Mere, April and Sept., 1948 (H.W.).

Order AMPHIPODA

Gammarus pulex (L.)—FRESHWATER SHRIMP. Cliff Beck, Saltergate, Levisham Beck, 1929 (J.M.B.).

Order DECAPODA

Astacus pallipes Lereb.—CRAYFISH. Very common in the Hertford River, 1931. Few in Hackness and Forge Valley sections of River Derwent, 1937 (W.J.C., per T.B.). Several in River Derwent at Yedingham, 1932 (Ainsworth).

Class TARDIGRADA

Although their affinities are still uncertain, the Tardigrada are here considered as Arthropods.

Macrobiotus hufelandii Schultze—BEAR ANIMALCULE. Brow Moor, Robin Hood's Bay, 1933 (J.M.B.).

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LUMBRICIDAE — EARTHWORMS

F. C. Rimington

As British earthworms belong almost entirely to the family **Lumbricidae**, this review is limited to that family. Until recently no work appears to have been done locally on these very important creatures, but during the past few years Dr. A. C. Evans, Dr. G. W. Dumbleby, Mr. P. W. Murphy and probably others have examined the soil macrofauna of the district, particularly of the moorlands and forests.

Ecological factors largely govern the distribution of earthworms. Conditions during the ice-age would certainly destroy the aboriginal soil fauna, for even if the permanent ice did not cover every part of our area, the climatic conditions for immensely long periods must have been intolerable. When the climate modified and the ice retreated to the north, worms which had survived in southern Europe had the opportunity of extending their range. Some species proved far more able than others to colonise the areas progressively liberated from the ice. So successful indeed were these so-called "peregrine" species, that they now dominate not only the soil macrofauna of this area, but that of much of the land surface of the world. Probably man himself has been the chief agent in this expansion, but birds may have played a part. These ubiquitous species are marked with an asterisk in the following list and they may be considered common to the greater part of the northern hemisphere. Their chief interest in this district lies in their extremely varied distribution.

Although the following peregrine species have not yet been recorded from the Scarborough district, it is highly probable that they exist in appropriate situations:—**Eisenia veneta** var. **hortensis**, **Eiseniella tetraedra**, **Lumbricus festivus**.

The position of the remaining species, those which have proved less able to extend their range, is obscure, they may even now be spreading northwards but the amount of data available is meagre.

The variations in earthworm population are startling and although their necessities appear to be simple, some degree of moisture to prevent desiccation and some admixture of organic matter as food, it is at once apparent that many other factors are also involved; aeration, mineral content, soil-particle size, etc. The vegetation and the past history of the soil are other important factors, for instance the use of specific fertilisers tends to make worm populations more uniform. From the following tables it will be obvious that *pH* value and lime-content are of paramount significance.

Counts were made after digging and hand-sorting in April and May, intermediate between the cold of winter and the possible drought of summer, when many worms withdraw deeply underground, particularly the larger species.

Situation			Number of worms per square metre (Mean of several counts)
	pH Value		
1. Pine-woods on moors, Silpho	.... 3.5		None
2. Rough pasture, Thieves' Dyke	.... 3.7		None
3. Cultivated land a few yards from 2	.... 6.8		50
4. Limestone pasture, Suffield	.... 7.0		100
5. Loamy pasture, Crossgates	.... 5.1		310
6. Peaty pasture, Seamer	.... 7.2		36
7. Sandy pasture, Spital Corner	.... 7.3		12
8. Chalky pasture, Flixton	.... 7.9		48
9. Peat, Flixton	.... 7.5		12
10. Clay soil, Forge Valley	.... 4.9		32
11. Limestone rubble, Forge Valley	.... 7.3		20
12. Clay soil, Raincliffe Wood	.... 3.5		None
13. Chalky pasture, Fordon	.... 6.5		40
14. Pasture near beck, Fryup-dale	.... 6.2		500
15. Pasture near Esk, Glaisdale	.... 5.4		280
16. Peat, Manham Hill	.... 5.6		None
17. Stack refuse above 16	.... 5.9		18

The number of worms in any given area cannot be readily assessed with any accuracy; whether they are dug up or forced to the surface with such expellents as potassium permanganate and mowrah meal, there is a probability of considerable withdrawal into adjacent soil, particularly with the expellents. Differing methods of collection in different weather conditions at divers times of year make caution very necessary when comparing the counts of various investigators.

Stephenson gives some extremely high counts—Fir-wood 120, Orchard 720, Garden 1000, Meadow 1660-2000, all per square metre; indeed the figures are so high that it seems possible they include all the oligochaete worms found and not merely the Lumbricidae. On the other hand, Dr. A. C. Evans in describing an abnormal condition in Glaisdale, Fryup-dale and other valleys to the north of our area, estimates a mean of only 250 per square metre. Despite this somewhat low figure, the worm situation in these dales is popularly called a "plague"; in late summer and autumn the innumerable worm-casts cover the herbage in the pastures so that cattle are unable to feed and have to be moved to the uplands, and on the arable land standing stools are commonly filled with casts up to the level of the bands.

These heavy infestations are of long standing, local inhabitants say that for many years abnormal casting was known on the banks of the Esk near Sleights and the worms are actually known locally as the "Sleights Worm". In all cases the early infestations appear to have started on the banks of streams or rivers and to have spread progressively up the valley sides. In the upper end of Fryup-dale fifty years ago, the heavy castings extended only about 20 yards on either

side of the beck but now they extend 400 yards up the hillsides and are still spreading.

There are no very obvious reasons why earthworms should be so very plentiful in these dales, unless it be the apparent shortage of moles; certainly there are few signs of these natural predators. No information appears to exist of the status in these "worm-plague" areas of such parasites as the larvae of the nematode worm *Rhabdites pello*, or the dipterous larvae of *Pollenia rudis* and *Onesia sepulchralis*. Analysis of the soils from the heavily infested and little infested fields nearby show no significant difference in pH value, calcium, potassium, phosphate or nitrogen content, moisture or aeration, that could account for the earthworm preference for certain areas. There is no evidence from any available literature that worms constitute a similar problem in any other part of the British Isles. Dr. Evans estimated that there were at least twice as many worms per unit in the Esk valley as in any other area investigated by him.

He reports the presence of the following species:—

<i>Allolobophora nocturna</i>	....	....	52%
<i>A. caliginosa</i> f. <i>trapezoides</i>	....	....	19%
<i>A. terrestris</i> f. <i>longa</i>	....	....	5%
<i>A. chlorotica</i>	....	....	2%
<i>Eisenia rosea</i>	....	....	2%
<i>Lumbricus terrestris</i>	....	....	10%

The dominant species, *A. nocturna*, is the the one mainly responsible for the very heavy casting. There is a local story that these troublesome casts are caused by some strange worms that reached the district about 50 years ago. A foreign ship is said to have been wrecked near Whitby and the worms are supposed to have got ashore and spread up the Esk Valley. However *A. nocturna* is said by Dr. Evans to be not uncommon in other parts of England, though it was not recognised as a new species until as late as 1946.

No earthworms have been recorded from the open moorlands, although there may be a few where the limestone outcrops, and it seems likely that the free humus acids preclude their living there. Even when the moors have been ploughed and planted with pine-trees the worms appear to be non-existent; under other tree species however, particularly birch, worms have been recorded. When the moorland soil is cultivated and limed sufficiently to produce a dramatic change in pH value, earthworms become comparatively common.

Observations confirm Bornebusch's statement that soils more acid than pH 4.5 are inimical to earthworms, but that some species, notably *Lumbricus rubellus* appear to be developing a tolerance to relatively acid conditions.

It is rather surprising to find no earthworms in such old-established woodland as Raincliffe Wood, where the soil proves to be a very acid mor; in the contiguous woodland of the Forge Valley, worms are plentiful near the limestone exposures.

Much of the peat between Flixton and Cayton is unexpectedly alkaline and carries a considerable worm population, but some of this peat, presumably that not dressed with the adjacent chalk, seems to be wormless. In some places where a thin layer of recent humus covers the peat (e.g., stack-refuse) a fairly large worm population is confined strictly to this superficial humus layer and shows no inclination to penetrate the peat.

Earthworms appear to prefer fine-particled, lime-saturated soils, with a pH of from 5 to 7, plenty of humus and ample moisture; land which carries a high sheep population noticeably favours worm multiplication. Some idea of the extent of the worm population of our soils may be gathered from Bornebusch's estimate that in good pasture-land the weight of worms in an area is approximately equal to that of the livestock carried by that area.

Acknowledgments: Grateful thanks are due to Dr. A. C. Evans, Dr. G. W. Dimbleby of the Imperial Forestry Institute, Mr. H. W. Thompson of the National Agricultural Advisory Service, and Mr. F. Raw, land-agent of Fryup, for supplying information; to Dr. D. J. Higgins of the Lenton Experimental Station for determining the pH values of the soils; to Mr. P. Jefferson for checking the identifications and particularly to Professor E. A. Spaul for identifying my collections and for much helpful advice.

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The following initials are used:—

- | | |
|----------------------------|-------------------------|
| C.E.—Cernosvitov & Evans, | P.W.M.—P. W. Murphy, |
| as above | as above. |
| A.C.E.—Dr. A. C. Evans. | F.C.R.—F. C. Rimington. |
| G.W.D.—Dr. G. W. Dimbleby. | H.W.T.—H. W. Thompson. |

The arrangement and classification used in the following list of species recorded in the Scarborough area are those used by Cernosvitov and Evans (v.s.).

ALLOLOBOPHORA Eisen emend. Rosa

**caliginosa* (Sav.)—Very common in pastures and gardens. The commonest species in many parts of the world.

**forma trapezoidea* (Duges, A.)—Generally less abundant than the type but common in Glaisdale, at Lealholm, Goathland and particularly in Fryup-dale (A.C.E.).

**chlorotica* (Sav.)—Quite common in gardens and in straw refuse.

nocturna (Evans)—Local; the dominant species in Fryup-dale where it produces an unusually heavy cast (A.C.E.).

terrestris (Sav.)—Widely distributed in gardens, pastures, etc., many records (F.C.R.).

***forma longa** (Ude)—Fairly common in the Fryup-dale district (A.C.E.); Staxton sand-pits (F.C.R.).

BIMASTUS Moore

***eiseni** (Lev.)—In birch copses adjacent to Suffield Moor. Appeared after only 4 years on Silpho Moor where birch litter had been applied to the moor surface (G.W.D.).

tenuis (Eis.)—Under the bark of old trees, moss, etc., Bridlington (C. & E.).

DENDROBAENA Eisen emend. Rosa

mammalis (Sav.)—Limestone pasture, Silpho (F.C.R.).

***octaedra** (Sav.)—Straw refuse over peat, Manham Hill (F.C.R.); Turkey-carpet plantation under holly, in considerable numbers in experimental plots on Wykeham Low Moor where damp conditions had been produced by a heavy heather mulch (G.W.D.).

***subrubicunda** (Eis.)—Although there are no actual records, this species (along with **D. rubida**) under the popular names of GILT-TAIL and COCKSPUR is well-known to local anglers. Can be regarded as one of the most common British species.

EISENIA Malm emend. Michaelsen

***foetida** (Sav.)—BRANDLING. Common in rich soil, manure and compost heaps. Some specimens noticeably luminescent (F.C.R.).

***rosea** (Sav.)—Widely distributed and common in limestone and chalk districts.

LUMBRICUS Linnaeus

***castaneus** (Sav.)—Widely distributed but probably not common, High Fordon, Manham Hill, Newby, etc. (F.C.R.).

***rubellus** (Hoffm.)—RED or MARSH WORM of anglers. Common in the peaty soil of the Carrs (F.C.R.); under birch on Wykeham and Suffield Low Moor (G.W.D.); in very acid conditions under birch in Allerston Forest (P.W.M.).

***terrestris** (L.)—COMMON EARTH-WORM of text-books, DEW-WORM, SQUIRREL-TAIL or TWACHEL of anglers. Widely distributed in gardens and woodlands. Probably the commonest local species although this is generally not so in other parts of the country (F.C.R.).

OCTOLASIUM Oerley

***cyaneum** (Sav.)—One record, Glaisdale (F.C.R.).

***lacteam** (Oerl.)—Sparingly at Bridlington (Nat., 1911, p. 394).

TERRESTRIAL ISOPODA — WOODLICE

E. A. Wallis

Little investigation in this branch has been done by members of the Society, and we have to thank other workers, notably F. Rhodes and R. S. Bagnall, for many of the records that are included here. One species found locally was the first British record.

Many of the commoner woodlice are extremely abundant and widely distributed all over the district in suitable habitats, but some of the rarer forms are very local. Seventeen species have so far been found in and around Scarborough.

The classification and nomenclature used in these records are those used in the most recent revision of British woodlice by Dr. E. B. Edney.

Grateful thanks are due to Dr. I. Gordon of the Crustacea section of the British Museum (Natural History) for help and advice.

The following contractions are used :—

R.S.B.—R. S. Bagnall

F.R.—F. Rhodes

H.B.—H. Britten fil.

G.B.W.—G. B. Walsh

W.J.C.—W. J. Clarke

E.A.W.—E. A. Wallis

Nat.—“ The Naturalist ”

LIGIIDAE

LIGIA Fabricius

oceanica (L.)—Fairly common at or just below high-water mark on the shore, in crevices of rocks and walls and among sea-weed and drift-wood. Specimens showing luminosity have been seen in the harbour (W.J.C., E.A.W.).

TRICHONISCIDAE

ANDRONISCUS Verhoeff

dentiger Verh.—Not uncommon among moss and dead wood ; Raincliffe Wood, Forge Valley (E.A.W.). **Trichoniscus roseus** (Koch) has been recorded from Scarborough Castle Hill (F.R., Nat., 1916, p. 100). This is an alpine species not found in Britain. Other British records of “ **T. roseus** ” have been identified lately as belonging to either of two species of **Androniscus**, namely **A. dentiger** Verh., or **A. weberi** Verh. Until the Castle Hill specimens have been re-examined, it is not possible to say to which species they belong.

TRICHONISCUS Brandt

pusillus pusillus Brandt—Not uncommon and widely distributed.

pygmaeus Sars, G. O.—Widely distributed ; Ravenscar (F.R., Nat., 1916, p. 101) ; Forge Valley, Raincliffe Wood (E.A.W.).

TRICHONISCULUS Patience

[*albidus* (Budde-Lund)—Rare ; cliffs near Whitby (R.S.B., Nat., 1922, p. 92).]

TRICHONISCOIDES Patience

sarsi Pat.—Rare ; Scarborough, Filey, Cayton Bay (R.S.B., Nat., 1922, p. 92). [Specimens taken near Whitby (R.S.B.) were the first British record (F.R., Nat., 1916, p. 101).]

HAPLOPHTHALMUS Schobl

mengii (Zadd.)—Rare ; [cliffs near Whitby (F.R., Nat., 1916, p. 102);] Scarborough (R.S.B., Nat., 1922, p. 92).

danicus Budde-Lund—Rare ; Filey, [cliffs near Whitby] (R.S.B., Nat., 1922, p. 92).

ONISCIDAE

ONISCUS Linnaeus

asellus L.—Extremely abundant everywhere.

PHILOSCIA Latreille

muscorum (Scop.)—Very common and widely distributed.

PORCELLIO Latreille

scaber Latr.—Abundant and generally distributed.

spiniornis Say—Not common ; Forge Valley (F.R., Nat., 1916, p. 122).

PLATYARTHURUS Brandt

hoffmannseggii Brandt—Barns Cliff Wood, in nests of *Formica rufa* (G.B.W.) ; Grosmont (H.B.).

CYCLISTICUS Schnitzler

convexus (De G.)—Not uncommon ; Scarborough (E.A.W.) ; Scalby Mills (F.R., Nat., 1916, p. 123).

ARMADILLIDIIDAE

ARMADILLIDIUM Brandt

vulgare (Latr.)—Common and widely distributed.

pulchellum (Zench.)—Rare ; Langdale End (F.R., Nat., 1916, p. 122).

nasatum Budde-Lund—Not common ; Oak Road, Scarborough, in a green-house, 1939 (W.J.C.).

MYRIAPODA — MILLIPEDES and CENTIPEDES

G. B. Walsh

Class DIPLOPODA—MILLIPEDES

This list is based largely on the following article : " British Millipedes, with special reference to Yorkshire species ", by Gordon Blower, *Naturalist*, 1952, pp. 145-157.

We are indebted to Mr. Blower for much kindly help, including the identification of species submitted to him and the reading of this list.

Glomeris marginata (Vill.)—PILL MILLIPEDE. Common in woodlands and hedge-banks. Var. **perplexa** (Latz.) occurs with the type together with intermediate forms.

Polydesmus angustus Latz.—Frequent at roots of lupins in winter.

P. coriaceus Por.—Widely distributed but nowhere common.

Polymicrodon polydesmoides Leach—Thornton-le-Dale (G.B.); Raincliffe Wood (G.B.W.).

Choneiulus palmatus (Nem.)—An immature female referable to this species or to **Nopoiulus minutus** (Brandt) was collected by Dr. Butler from Thornton-le-Dale, 9/50 (G.B.).

Blaniulus pulchellus (Leach) (= **B. guttulatus** (Bosc))—SPOTTED-SNAKE MILLIPEDE. Often found at the roots of various plants and in potatoes, carrots, etc., normally aggravating the damage caused initially by some other agent. Common in the nests of **Formica rufa** at Barns Cliff and Whisperdales (G.B.W.).

Archeboreoiulus pallidus (Brade-Birks)—Thornton-le-Dale, 9/50, 1 f. (G.B.).

Iulus (**Micropodoiulus**) **scandinavicus** (Latz.)—Raincliffe Wood in forest litter (G.B.W.).

Brachyiulus (**Microbrachyiulus**) **pusillus** (Leach)—Hayburn Wyke (G.B.W.).

Schizophyllum sabulosum (L.)—Hayburn Wyke, not uncommon (G.B.W.).

Tachypodoiulus niger (Leach)—The commonest big black **Iulid** in gardens all over the district, this species eats fruit, especially in autumn, e.g. brambles.

Cylindroiulus latestriatus (Curt.) (= **C. oweni** (Bollm.))—Scarborough Castle Hill under stone (G.B.). A species mainly confined to the coast.

C. punctatus (Leach)—Fairly common and well distributed, especially under the bark of fallen trees (G.B.W.).

Class CHILOPODA—CENTIPEDES

There is little published work on this Class, and we are indebted to Mr. Gordon Blower for records of the species and for kindly identifying a few specimens I sent to him.

Lithobius melanops Newp.—Not uncommon in a greenhouse at Scarborough, 9/53 (G.B.W.).

L. forficatus (L.)—Probably the commonest garden centipede; also common under the bark of fallen trees.

L. crassipes Koch, L.—Thornton-le-Dale, 1 spn., 9/50 (G.B.).

Haplophilus subterraneus (Shaw)—A common garden species, often mistaken for a millipede.

Hydroschendyla submarina (Grube)—Cloughton Wyke below H.W.M. (Cloudsley-Thompson, Nat., 1948, p. 149). A rare littoral species.

Necrophloeophagus longicornis (Leach)—Thornton-le-Dale, 9/50, Scarborough Castle Hill, 3/9/52 (G.B.).

Geophilus carpophagus Leach—Cloughton Wyke, under stones on top of cliff, 17/8/48 (G.B.).

[**G. electricus** (L.)—Whitby (R. S. Bagnall).]

[**G. anglicanus** Bagn.—Sewerby, 5/8/34 (R. S. Bagnall).]

INSECTA

Order THYSANURA — BRISTLE-TAILS

G. B. Walsh

MACHILIDAE

PETROBIUS Leach

maritimus (Leach).—Common along the coast.

PRAEMACHILIS Silvestri

hibernica Carp.—Under limestone rocks in Forge Valley.

LEPISMATIDAE

LEPISMA Linnaeus

saccharina L.—SILVER-FISH. Not uncommon in food stores, especially in old houses.

LEPISMODES Newman

domesticus (Pack.).—FIRE-BRAT. Found in bakeries in Scarborough, running in numbers on the outside of the ovens in places where it was too hot to put the hand.

Order DIPLURA — BLIND BRISTLE-TAILS

CAMPODEA Westwood

staphylinus Westw.—Common under stones and among dead leaves.

Order COLLEMBOLA — SPRING-TAILS

J. M. Brown and G. B. Walsh

The following list has been compiled from private records and from :—

R. S. Bagnall : Contributions towards our knowledge of the Collembola, *Vasculum*, 1921, p. 14.

J. M. Brown : Additional Notes on Apterygota of Yorkshire and Derbyshire, 1923, *Naturalist*, pp. 261-4.

J. M. Brown : Entomology around Robin Hood's Bay, 1938, *Naturalist*, pp. 201-6.

HYDROPODURIDAE

HYDROPODURA Boerner, C.

aquatica (L.)—Common (J.M.B., G.B.W.).

ACHORUTIDAE

ACHORUTES Templeton

scoticus Carp. & Evans—Ravenscar (R.S.B.).

pseudoviaticus Bagn.—In very large numbers in rotting seaweed at Robin Hood's Bay (J.M.B.) ; at mouth of Scalby Beck (G.B.W.).

NEANURIDAE

MACGILLIVRAYA Grote

claviseta (Axels.)—Ravenscar (R.S.B.).

PSEUDACHORUTES Tullberg

corticola (Schaeff.)—Ravenscar (R.S.B.).

subcrassus Tullb.—Ravenscar (R.S.B.).

dubius Krausb.—Ravenscar (R.S.B.).

ANURIDA Laboulbène

maritima Lab.—Abundant in rock-pools and under layers of rock along the coast ; it is preyed upon by the beetles *Aepopsis robinii*, *Aepus marinus* and *Micralymma marinum* (G.B.W.).

PARANURA Axelson

sexpunctata Axels. var. *clavisetis* Axels.—Ravenscar (R.S.B.).

MICRANURIDA Boerner, C.

pygmaea Boern., C.—Ravenscar (R.S.B.).

ONYCHIURIDAE

ONYCHIURUS Gervais

fimetarius (L.)—Raincliffe Wood (G.B.W.).

PROTAPHORURA Absolon

armata (Tullb.)—Raincliffe Wood (G.B.W.).

TULLBERGIIDAE

PARATULLBERGIA Womersley

carpenteri Bagn.—Ravenscar (R.S.B.).

macdougalli Bagn.—Ravenscar (R.S.B.).

ISOTOMIDAE

ISOTOMODES Axelson

[*britannicus* Bagn.—Whitby (R.S.B.).]

ISOTOMA Bourlet

viridis Bourl.—Browside, Robin Hood's Bay (J.M.B.).

[*olivacea* Tullb.—Near Bridlington (J.M.B.).]

sensibilis Tullb.—Browside, Robin Hood's Bay (J.M.B.).

PODURA Linnaeus

minor (Lubb.)—Raincliffe Wood (G.B.W.) ; Robin Hood's Bay (J.M.B.).

MYDONIIDAE

ISOTOMURUS Boerner, C.

palustris (Muell., O. F.)—Browside, Robin Hood's Bay (J.M.B.) ; Throxenby Mere (G.B.W.) ; Scarborough Mere (J.M.B.).

ORCHESELLA Templeton

cincta (L.)—Browside, Robin Hood's Bay (J.M.B.) ; Raincliffe Wood, Forge Valley, Hayburn Wyke (G.B.W.).

litoralis Brown, J. M.—Among shingle, Ravenscar (J.M.B.).

MYDONIUS Gistel

albocinctus (Templ.)—Robin Hood's Bay (J.M.B.).

nivalis (L.)—Robin Hood's Bay (J.M.B.).

forma *nicoletii* (Lubb.)—Browside, Robin Hood's Bay (J.M.B.).

multifasciatus (Tullb.)—Browside, Robin Hood's Bay (J.M.B.).

LEPIDOCYRTUS Bourlet

lanuginosa (Gmel.)—Raincliffe Wood (G.B.W.) ; Robin Hood's Bay (J.M.B.).

SEIRA Lubbock

platani (Nic.) forma *nigromaculata* (Lubb.)—Robin Hood's Bay (J.M.B.).

CYPHODURUS Nicolet

albinos Nic.—Common in nests of *Formica rufa* at Barns Cliff (G.B.W.).

SMYNTHURIDAE

SMINTHURIDES Boerner, C.

malmgreni (Tullb.) var. *elegantulus* (Reut.)—In plenty, Scarborough Mere (J.M.B.).

ARRHOPALITES Boerner, C.

pygmaeus (Wank.)—In sphagnum, Ravenscar (R.S.B., Vasculum, 1921, p. 14).

BOURLETIELLA Banks

signata (Nic.)—In garden, Scarborough (G.B.W.).

DEUTEROSMINTHURUS Boerner, C.

bicinctus (Koch) var. *repandus* (Agren)—Scarborough (J.M.B.).

SMYNTHURUS Latreille

viridis (L.)—Robin Hood's Bay (J.M.B.) ; common, Scarborough district (G.B.W.).

ALLACMA Boerner, C.

fusca (L.)—Robin Hood's Bay (J.M.B.) ; Forge Valley (G.B.W.).

Order — ORTHOPTERA

COCKROACHES and GRASSHOPPERS

G. B. Walsh

CURSORIA—COCKROACHES

BLATTIDAE

BLATTA Linnaeus

orientalis (L.)—Fairly common in old houses and bakeries. Specimens are occasionally found in the open.

At times various species of foreign cockroaches e.g. *Pycnoscelus*, are accidentally introduced into the district in fruit, but as they do not establish themselves as members of our fauna and have no real significance, they have been omitted.

SALTATORIA—GRASSHOPPERS

TETRIGIDAE

TETRIX Latreille

vittata (Zett.)—Fairly common. Ravenscar, Hayburn Wyke (G.B.W.) ; Levisham, Fylingdales Moor (H.B.) ; plentiful at Howdale ; probably all local records entered as *Tetrix bipunctata* L. should be transferred to this species.

ACRIDIDAE

OMOCESTUS Bolivar, I.

viridulus (L.)—Common and generally distributed.

ventralis (Zett.)—Not common, Flixton (G.B.W.).

MYRMELEOTETTIX Bolivar, I.

maculatus (Thunb.)—Flixton (G.B.W.) ; Howdale (J.M.B.).

CHORTHIPPUS Fieber

bicolor (Charp.)—Common.

parallelus (Zett.)—Common.

LOCUSTA Linnaeus

migratoria (L.)—During August and September, 1931, a few examples of this species occurred in scattered localities in the district, members of a general visitation to Britain, but they did not breed and speedily died out.

TETTIGONIIDAE

PHOLIDOPTERA Wesmael

griseoptera (De G.)—Rare. Several examples were seen at Hayburn Wyke, 27/9/20, but only one was captured as they were very active on a difficult part of the cliff (G.B.W.).

METRIOPTERA Wesmael

brachyptera (L.)—Fylingdales Moor (H.B.).

GRYLLIDAE

GRYLLUS Linnaeus

campestris L.—FIELD CRICKET. Mr. W. S. Drake, M.A. (in litt.), gave me a description and drawings of a pair of insects seen at Hayburn Wyke, 30/9/39, which were apparently this insect. From the distribution-map in Dr. Malcolm Burr's "British Grasshoppers and their Allies," 1936, this is not impossible, but the record needs confirmation.

Order DERMAPTERA — EARWIGS

E.C.H.—E. C. Horrell. G.B.W.—G. B. Walsh.

LABIIDAE

LABIA Leach

minor (L.)—LESSER EARWIG. Few records but well distributed Raincliffe Wood (E.C.H.) ; Thornton-le-Dale, Pickering, Scarborough (G.B.W.).

FORFICULIDAE

FORFICULA Linnaeus

auricularia L.—COMMON EARWIG. Abundant ; the macrolabious form (f. **forcipata** Steph.) occurs occasionally ; the length of the forceps in the male is somewhat variable.

Order PLECOPTERA — STONEFLIES

H. Whitehead

The numerous streams near Scarborough provide excellent conditions for Stoneflies and their nymphs. This statement is borne out by the fact that out of the 33 species in Britain no less than 25 (over 75%) have been taken in the area under consideration.

A complete list of records to date was given in the "Naturalist" of December, 1929, and other records have appeared in the same journal since that date.

The records are by the following workers :

H.B.—H. Britten, fil.

G.T.P.—G. T. Porritt

J.M.B.—J. M. Brown

G.B.W.—G. B. Walsh

E.P.—E. Percival

H.W.—H. Whitehead

TAENIOPTERYGIDAE

BRACHYPTERA Newport

risi (Mort.)—Staintondale, Mill Beck, (E.P.) ; Littlebeck, 17/5/37. (H.B.) ; Robin Hood's Bay, 1/7/37, Oxbank Wood, 1/7/37, Brockets, Fylingdales, Fylinghall, 25/6/36, Ramsdale Beck, 8/4/40, (J.M.B.) ; Troutsdale, 9/5/42, Harwood Dale, 13/5/40, (H.W.).

RHABDIOPTERYX Klapálek

anglica Kimm.—A female was taken in Harwood Dale, 10/4/27, (E.P.), and was recorded as *R. neglecta* Alb. Two males and one female were taken from Pickering Beck, 25/4/42, (H.W.). These specimens were submitted to D. E. Kimmins, who regarded all the examples as belonging to a new species. See Proc. R. Ent. Soc. Lond., Series B, vol. 12 (1943), 42-44.

TAENIOPTERYX Pictet

nebulosa (L.)—Female known as "February Red." Langdale End, (E.P.); Pickering, (G.T.P.).

NEMOURIDAE

PROTONEMURA Kempny

meyeri (Pict.)—Staintondale, Grain Beck, Robin Hood's Bay, (E.P.); Fylinghall, 19/3/36, Maw Wyke, 25/6/37, Brockets, 16/6/37, Oxbank Wood, 1/7/37, Ramsdale, 14/6/37, Ravenscar, 26/3/37, Littlebeck, 1933, (J.M.B.); Beckhole, 4/5/35, Raithwaite, 21/3/36, Hole of Horcum, 26/7/37, (H.B.); Pickering, 28/3/42, Goathland, 6/7/46, Troutdale, 9/5/42, (H.W.); Hayburn Wyke, (G.B.W.).

praecox (Mort.)—Fylingdales, 4/33, Brockets, 12/3/39, Fylinghall, (J.M.B.).

AMPHINEMURA Ris.

sulcicollis Steph.—Langdale End, (E.P.); Oxbank Wood, 1/7/37, Ramsdale, 14/6/37, Brockets, 16/6/37, Ravenscar, 26/6/37, Maw Wyke, 25/6/37, Fylinghall, 26/6/36, Hole of Horcum, 26/7/37, (H.B.).

standfussi Ris—Robin Hood's Bay, 19/6/37, Brockets, 28/6/37, Maw Wyke, 25/6/37, Ramsdale, 8/7/37, Linger's Fields, (J.M.B.); Hole of Horcum, 26/7/37, (H.B.).

NEMOURA Pictet

cinerea Retz.—Brockets, 28/6/37, Oxbank Wood, 1/7/37, Ramsdale, 21/6/27, Goathland, 3/8/30, Saltergate, 1930, (J.M.B.); Hayburn Wyke, (G.B.W.).

avicularis Mort.—Staintondale, (E.P.); Robin Hood's Bay, Brockets, 26/4/38, (J.M.B.); Pickering, 24/4/42, (H.W.).

cambrica Steph.—Staintondale, (E.P.); Brockets, 25/6/37, Ramsdale, 8/7/37, Linger's Fields, 14/5/42, N. Cliffs, Robin Hood's Bay, (J.M.B.); Harwood Dale, 26/4/41, Dalby Beck, 7/6/41, Troutdale, 9/5/42, Goathland, 5/5/48, (H.W.); Hayburn Wyke, (G.B.W.).

erratica Claass.—Ramsdale, 8/7/37, Howdale, 4/5/39, Ness Cliffs, 26/6/40, Linger's Fields, Fylinghall, 19/8/36, (J.M.B.); Hole of Horcum, 12/6/37, (H.B.).

NEMURELLA Kempny

inconspicua (Pict.)—Brockets, 19/6/37, Howdale, 31/5/39, Fylinghall, 31/5/40, (J.M.B.); Troutdale, 9/5/42, (H.W.); Sleights, 6/10/35, (H.B.); Hayburn Wyke, (G.B.W.).

LEUCTRIDAE

LEUCTRA Stephens

geniculata Steph.—“Willow Fly.” Pickering, Scalby Beck, (G.T.P.) ; Brockets, (J.M.B.) ; Goathland, 24/9/48, (H.W.) ; Hayburn Wyke, (G.B.W.).

inermis Kempny—Staintondale, Mill Beck, (E.P.) ; Howdale, 12/6/37, Ramsdale, 14/6/37, Ravenscar, 23/6/37, Littlebeck, 1933, Maw Wyke, 25/6/37, Brockets, 3/6/40, Fylinghall, 26/6/36, (J.M.B.) ; Troutsdale, 9/5/42, Goathland, 6/7/46, (H.W.) ; Forge Valley, (G.B.W.).

hippopus Kempny—Bloody Beck, Mill Beck, Staintondale, Black Beck, (E.P.) ; Brockets, 26/4/38, Howdale, 12/3/40, (J.M.B.) ; Littlebeck, 17/5/37, (H.B.) ; Pickering, 6/6/42, Dalby Beck, 7/6/41, Harwood Dale, 26/4/51, Troutsdale, 9/5/42, Goathland, 14/4/47, (H.W.) ; Hayburn Wyke, (G.B.W.).

nigra (Oliv.)—Mill Beck, (E.P.) ; Fylinghall, 19/6/36, Saltergate, (J.M.B.) ; Littlebeck, 17/5/37, Ramsdale, 19/6/37, (H.B.) ; Harwood Dale, 13/5/40, (H.W.).

fusca (L.)—Falling Foss, Mill Beck, (E.P.) ; Fylinghall, 23/6/36, Oxbank Wood, 14/9/36, Ramsdale, 24/9/36, Goathland, 2/8/30, Maw Wyke, 17/9/36, (J.M.B.) ; Beckhole, 4/5/35, Hole of Horcum, 26/7/37, (H.B.) ; Pickering, 2/8/41, (H.W.) ; Hayburn Wyke, (G.B.W.).

moselvi Mort.—Brockets, 26/4/38, Fylinghall, 29/8/40, Howdale, 9/9/40, (J.M.B.).

CAPNIIDAE

CAPNIA Pictet

bifrons Newm.—Staintondale, Mill Beck, Grain Beck, (E.P.) ; Brockets, 26/2/42, adults emerging in the snow, (J.M.B.) ; Raithwaite, 21/3/36, Littlebeck, 17/5/37, (H.B.).

vidua Klap.—Littlebeck, Howdale Beck, 12/4/40, (J.M.B.) ; Goathland, 5/5/48, (H.W.).

PERLIDAE

PERLA Pictet

cephalotes Curt.—Ramsdale, (E.P.) ; Pickering, (G.T.P.).

PERLODIDAE

PERLODES Banks

mortoni (Klap.)—Staintondale, Mill Beck, Robin Hood's Bay, Ramsdale, Grain Beck, (E.P.) ; Falling Foss, Howdale, 4/5/39, Brockets, 26/4/38, Fylinghall, 4/5/40, (J.M.B.) ; Littlebeck, 17/5/37, (H.B.) ; Pickering, 25/4/42, Goathland, 10/4/48, (H.W.) ; Forge Valley, Hayburn Wyke, (G.B.W.).

CHLOROPERLIDAE

CHLOROPERLA Newman

torrentium (Pict.)—Mill Beck, (E.P.) ; Maw Wyke, 25/6/37, Fylinghall, 26/6/36, Ramsdale, 14/6/37, Brockets, (J.M.B.) ; Goathland, 6/7/46, (H.W.) ; Hayburn Wyke, (G.B.W.).

tripunctata (Scop.)—Mill Beck, (E.P.) ; Ramsdale, 19/6/37, Brockets 16/6/37, Fylinghall, 26/6/36, (J.M.B.) ; Pickering, 6/6/42, (H.W.) ; Hole of Horcum, 26/7/37, (H.B.).

ISOPERLIDAE

ISOPERLA Banks

grammatica (Poda)—“ Yellow Sally.” Common; Mill Beck, (E.P.) ; Ramsdale, 21/6/37, Maw Wyke, 25/6/37, Fylinghall, (J.M.B.) ; Pickering Beck, 21/8/41, Forge Valley, 12/6/43, (H.W.) ; Hole of Horcum, 26/6/37, (H.B.) ; Hayburn Wyke, (G.B.W.).

Order PSOCOPTERA — PSOCIDS, BOOK-LICE

J. M. Brown

The insects belonging to this group are small, inconspicuous and soft-bodied. They form one of the “neglected” orders, rarely collected and studied by entomologists. Perhaps the most widely known members are the “Book-Lice” and “Lesser Death-Watch” insects.

Psocids, however, are very plentiful, occurring most usually amongst the foliage or on the bark of various trees, but many, especially among the wingless or short-winged species, can also be found under stones or among dead leaves. The “Book-Lice” do much damage to book-bindings and to insect or plant collections, and even to food substances indoors.

The species recorded in the following list were nearly all obtained in the Fylingdales district, around Robin Hood’s Bay.

ISOTECNOMERA

PSOCIDAE

PSOCUS Latreille

gibbosus (Sulz.)—On oak, not very common.

nebulosus Steph.—Chiefly on oak.

TRICHADENOTECHNUM Enderlein

sexpunctatum (L.)—Frequent, resting on the bark of various trees.

LOENSIA Enderlein

fasciata (Fabr.)—Fairly frequent on the bark of trees.

variegata (Latr.)—In similar situations to the last.

AMPHIGERONTIA Kolbe

bifasciata (Latr.)—A common species, among the foliage and on the bark of various trees.

STENOPSOCIDAE

GRAPHOPSOCUS Kolbe

cruciatus (L.)—One of the commonest species, found on trees, especially oak. Interesting variations in the length of the wings occur among individuals.

STENOPSOCUS Hagen

stigmaticus (Imh. & Labr.)—Not so common as the next species, but occurring in Fylingdales on oak, holly and ivy.

immaculatus (Steph.)—A very common species on deciduous trees.

POLYPSOCIDAE**REUTERELLA** Enderlein

helvimaculata (End.)—Common on the trunks of trees. In the crevices of the bark they construct webs under which adults, immature individuals and eggs may be found.

CAECILIIDAE**CAECILIUS** Curtis

fuscopterus (Latr.)—This species has occurred once only in this area, when it was beaten from a hawthorn hedge beneath an oak, at Robin Hood's Bay.

flavidus (Steph.)—Plentiful; obtained by beating various trees, especially oak.

burmeisteri Brauer—Common on conifers.

ENDERLEINELLA Badonnel

obsoleta (Steph.)—Fairly common and often obtained with the previous species on conifers.

LACHESILLA Westwood

pedicularia (L.)—A common species, sometimes occurring in swarms, but in this area known only from Robin Hood's Bay.

PERIPSOCIDAE**PERIPSOCUS** Hagen

phaeopterus (Steph.)—Fairly common on both deciduous and coniferous trees.

parvulus Kolbe—Not at all common. The only known occurrence in this area was a colony found on the bark of an old sycamore tree at Fylinghall.

alboguttatus (Dalm.)—Another uncommon species, taken on larch at Robin Hood's Bay.

ECTOPSOCUS McLachlan

briggsi (McL.)—Fairly common on various trees such as oak and holly, and sometimes occurring in large numbers among decaying leaves in winter.

HETEROTECNOMERA**MESOPSOCIDAE****MESOPSOCUS** Kolbe

unipunctatus (Muell., O.F.)—Common and widespread on various trees.

ELIPSOCUS Hagen

consimilis McL.—Taken in this area only in Ramsdale on larch and Scots pine.

cyanops Rost.—Plentiful on conifers.

hyalinus (Steph.)—Common on deciduous trees.

westwoodi McL.—Common and frequently occurring with the last species.

PHILOTARSUS Kolbe

pivicornis (Fabr.)—Common, especially on conifers.

LIPOSCELIDAE**LIPOSCELIS** Motschulsky

divinatorius (Muell., O.F.)—Very common; too plentiful in houses where it does much damage to insect collections and dried plants, etc. One of the Book-Lice.

PSYLLIPSOCIDAE**PSYLLIPSOCUS** Selys

ramburi Sel.—Occurs indoors among papers, etc., sometimes with the previous species but not so commonly. The short-winged form, previously known as **Nymphopsocus destructor** (End.), has been taken once in the area, at Robin Hood's Bay.

TROGIIDAE**LEPINOTUS** Heyden

inquilinus Heyd.—Occurs indoors, sometimes in large numbers; our only record is from Scarborough.

TROGIUM Illiger

pulsatorium (L.)—Another of the Book-Lice and a household pest. Does much damage to book-bindings and collections of insects and plants, and is commonly known as the Lesser Death-Watch.

HYPERETES Kolbe

guestfalicus Kolbe—Occurs plentifully on tree trunks, sycamore, beech, alder and ash.

Order ANOPLURA — LICE

G. B. Walsh

MALLOPHAGA—BITING LICE

The following records are based on specimens in a collection formed at the end of the last century by the late W. J. Clarke, and on examples found on their hosts by J. S. Hicks of High Fordon, near Wold Newton, A. J. Wallis and G. B. Walsh.

They have been identified by the late Dr. J. Waterston, by Mr. Gordon B. Thompson and by Miss Theresa Clay. We are especially indebted to Miss Clay for the great help she has also given us in the compilation of this list and for much helpful advice.

The list is alphabetical and is based on "A Check List of the Genera and Species of Mallophaga" by G. H. E. Hopkins and Theresa Clay, published by the British Museum, 1952.

At Miss Clay's suggestion we are marking certain species with an * indicating 'that such names are provisional until a revision of the genus shows whether or not they are synonymous with another species'.

For conformity the scientific names of the birds are the same as those used later in the list of birds by A. J. Wallis.

AMYRSIDEA Ewing

perdicis (Denny)—On common partridge, *Perdix p. perdix* (L.)—Scarborough, Rudston.

ANATICOLA Clay

***angustolimbatus** (Gieb.)—On common scoter, *Melanitta n. nigra* (L.)—Filey Brigg, 27/12/51, Scarborough.

anseris (L.)—On domestic goose, *Anser anser* (L.)—Scarborough.

crassicornis (Scop.)—On mallard, *Anas p. platyrhynchos* L.—Scarborough.

crassicornis sordidus (Gieb.)—On teal, *Anas c. crecca* L.—Scarborough.

***frater** (Gieb.)—On long-tailed duck, *Clangula hyemalis* (L.)—Scarborough.

rubromaculatus (Rudow)—On common eider, *Somateria m. mollissima* (L.)—Scarborough.

ANATOECHUS Cummings

***brunneopygus** (Mjoeb.)—On brent goose, *Branta bernicla* (L.)—Scarborough.

***ferrugineus** (Gieb.)—On common scoter, *Melanitta n. nigra* (L.)—Scarborough.

***natatorium** (Rudow)—On long-tailed duck, *Clangula hyemalis* (L.)—Scarborough.

BRUELIA Kéler

merulensis (Denny)—On blackbird, *Turdus m. merula* L.—Hackness.

nebulosa (Burm.)—On starling, *Sturnus v. vulgaris* L.—Scarborough.

uncinosa (Burm.)—On carrion-crow, *Corvus c. corone* L.—High Fordon, -/4/54.

viscivori (Denny)—On mistle-thrush, *Turdus v. viscivorus* L.—Scarborough.

CAMPANULOTES Kéler

bidentatus (Scop.)—On wood-pigeon, *Columba p. palumbus* L.—Scarborough.

compar (Burm.)—On pigeon, *Columba livia domestica* L.—Scarborough.

COLOCERAS Taschenberg

damicorne (Nitzsch)—On wood-pigeon. *Columba p. palumbus* L.—near Scarborough.

COLPOCEPHALUM Nitzsch

subaequale Burm.—On rook, *Corvus f. frugilegus* L.—Scarborough.

COLUMBICOLA Ewing

claviformis (Denny)—On wood-pigeon, *Columba p. palumbus* L.—Scarborough, Bampton.

columbae (L.)—On pigeon, *Columba livia domestica* L.—Scarborough.

CRASPEDONIRMUS Thompson

colymbinus (Denny)—On red-throated diver, *Colymbus stellata* Pontopp.—Scarborough, 18/6/94.

CUMMINGSIELLA Ewing

ovalis (Scop.)—On common curlew, *Numenius a. arquata* (L.)—Scarborough.

DAMALINIA Mjoeberg

breviceps (Rudow)—On cow, *Bos taurus* L.—Widely distributed.

caprae (Gurlt)—On goat, *Capra hircus* L.—Scarborough.

DEGEERIELLA Neumann

rufa (Burm.)—On kestrel, *Falco t. tinnunculus* L.—Scarborough.

DENNYUS Neumann

hirundinis (L.)—On swift, *Apus a. apus* (L.)—Filey, 22/5/52; Scarborough.

FELICOLA Ewing

subrostratus (Burm.)—On domestic cat, *Felis catus* L.—Common.

vulpis (Denny)—On fox, *Vulpes vulpes crucigera* (Bechst.)—Scarborough.

GLIRICOLA Mjoeberg

porcelli (Schr.)—On cavy, *Cavia porcellus* (L.)—Scarborough.

GONIOCOTES Burmeister

alatus Piag.—On red-legged partridge, *Alectoris r. rufa* (L.)—Scarborough, 17/4/52.

GONIODES Nitzsch

dispar Burm.—On red-legged partridge, *Alectoris r. rufa* (L.)—Scarborough, 17/4/52.

spiniornis Nitzsch—On tragopan, *Tragopan satyra* (L.)—Near Scarborough; probably an aviary bird, and therefore the record is of no faunistic significance.

GYROPUS Nitzsch

ovalis Burm.—On cavy, *Cavia porcellus* (L.)—Scarborough.

HOHORSTIELLA Eichler

gigantea (Denny)—On stock-dove, *Columba oenas* L.—Flamborough, Scarborough.

LUNACEPS Clay & Meinertzhagen

numenii (Denny)—On common curlew, *Numenius a. arquata* (L.)—near Scarborough.

MENACANTHUS Neumann

mutabilis Blag.—On starling, *Sturnus v. vulgaris* (L.)—Scarborough.

stramineus (Nitzsch)—On domestic turkey, *Meleagris gallopavo domestica*—Scarborough.

MENOPON Nitzsch

gallinae (L.)—On fowl, *Gallus domesticus*—Scarborough.

MYRSIDEA Waterston

anathorax (Nitzsch)—On jackdaw, *Corvus monedula spermologus* Vieill.—Scarborough.

cornicis (De G.)—On carrion-crow, *Corvus c. corone* L.—High Fordon, -/4/54; Scarborough.

cucularis (Nitzsch)—On starling, *Sturnus v. vulgaris* L.—Scarborough.

isostoma (Nitzsch)—On rook, *Corvus f. frugilegus* L.—Scarborough.

picae (L.)—On magpie, *Pica p. pica* (L.)—Raincliffe Wood.

ORNITHOBIUS Denny

cygni (L.)—On whooper swan, *Cygnus cygnus* (L.)—Near Scarborough.

PECTINOPYGUS Mjoeberg

bassani (Fabr., O.)—On gannet, *Sula bassana* (L.)—Scarborough, 2/7/53.

PERINEUS Harrison

nigrolimbatus (Gieb.)—On fulmar petrel, *Fulmarus g. glacialis* (L.)—Scarborough, -/4/54; Flamborough.

PHILOPTERUS Nitzsch

atratus Nitzsch—On rook, *Corvus f. frugilegus* L.—Scarborough, 24/2/51; High Fordon, -/4/54.

cincli (Denny)—On dipper, *Cinclus cinclus gularis* (Lath.)—Moors near Scarborough.

fringillae (Scop.)—On house-sparrow, *Passer d. domesticus* (L.)—Scarborough, 27/12/51.

guttatus (Denny)—On jackdaw, *Corvus monedula spermologus* Vieill.—Scarborough; Hackness, 19/7/24.

***hamatus** (Pack.)—On snow-bunting, *Plectrophenax n. nivalis* (L.)—Scarborough.

***merulae** (Denny)—On blackbird, *Turdus m. merula* L.—Scarborough.

modularis (Denny)—On hedge-sparrow, *Prunella modularis* (L.)—Scarborough, 29/7/53.

ocellatus (Scop.)—On hooded crow, *Corvus c. cornix* L.—Scarborough.

picae (Denny)—On magpie, *Pica p. pica* (L.)—Raincliffe Wood.

pyrrhulae (Schr.)=*P. c. citrinellae* (Schr.)—On bullfinch, *Pyrrhula pyrrhula* (L.)—Scarborough.

turdi (Denny)—On song-thrush, *Turdus ericetorum* Turton—Scarborough.

QUADRACEPS Clay & Meinertzhagen

alcae (Denny)—On razorbill, *Alca torda* L.—Scarborough.

eugrammicus (Burm.)—On little gull, *Larus minutus* Pall.—Scarborough.

obliquus (Mjoeb.)—On guillemot, *Uria aalge* (Pont.)—Filey Brigg, 14/1/51.

ornatus striolatus (Nitzsch)—On great black-backed gull, *Larus marinus* L., juvenile—Scarborough, 2/10/53.

punctatus (Burm.)—On black-headed gull, *Larus r. ridibundus* L.—Scarborough, -/4/52.

RICINUS De Geer

bombycillae (Denny)—On waxwing, *Bombycilla g. garrulus* (L.)—Scarborough.

irascens (Burm.)—On chaffinch, *Fringilla coelebs* L.—Scarborough.

SAEMUNDSSONIA Timmermann

calva (Kell.)—On guillemot, *Uria aalge* (Pont.)—Scarborough.

celidoxa (Burm.)—On razorbill, *Alca torda* L.—Flamborough.

cephalus (Denny)—On Arctic skua, *Stercorarius parasiticus* (L.)—Scarborough.

fraterculae (Overg.)—On puffin, *Fratercula arctica* (L.)—Flamborough.

inexpectata Timm.—On little gull, *Larus minutus* Pall.—Scarborough. New to science.

lari breviappendiculata (Piag.)—On herring gull, *Larus a. argentatus* Pont.—Bempton, 15/4/51; Scarborough, 16/3/53.

lari congener (Gieb.)—On common gull, *Larus c. canus* L.—Scarborough, 21/5/52.

lari gonothorax (Gieb.)—On great black-backed gull, *Larus marinus* (L.)—Scarborough, on young gull, 22/10/53.

lari lari (Fabr., O.)—On glaucous gull, *Larus hyperboreus* Gunn.—Scarborough.

lari muelleri Eichl.—On black-headed gull, *Larus r. ridibundus* L.—Scarborough.

lari tridactylae Timm.—On kittiwake, *Rissa t. tridactyla* (L.)—Scarborough; Bempton, 18/7/53.

lari waterstoni Timm.—On little gull, *Larus minutus* Pall.—Scarborough. New to science.

Miss Clay in litt. says "Although the populations of Mallophaga on these gulls have been named and can for the present time be considered as subspecies, it is probable that further revisionary work will show that some at least are not separable".

lockleyi Clay—On Arctic tern, *Sterna macrura* Naumann—Cornelian Bay, 12/9/52.

occidentalis (Kell.)—On fulmar petrel, *Fulmarus g. glacialis* (L.)—Scarborough, -/4/54.

sternae (L.)—On common tern, *Sterna h. hirundo* L.—Scarborough, -/11/93.

tringae (Fabr., O.)—On purple sandpiper, *Calidris m. maritima* (Brunn.)—Scarborough.

variabilis (Denny) = **tringae** (Fabr., O.)—On dunlin, *Calidris alpina* (L.)—Scarborough.

STURNIDOEUCUS Eichler

sturni (Schr.)—On starling, *Sturnus v. vulgaris* (L.)—Scarborough, -/3/52.

TRICHODECTES Nitzsch

canis (De G.)—On dog, *Canis familiaris* L.—Common.

ermineae (Hopk.)—On stoat, *Mustela erminea stabilis* Barr.-Ham. Scarborough.

melis (Fabr., J. C.)—On badger, *Meles meles* (L.)—Common.

Badgers found freshly killed have been very heavily infested.

mustelae (Schr.)—On weasel, *Mustela n. nivalis* L.—Scarborough.

TRINOTON Nitzsch

anserinum (Fabr., J. C.)—On goose, *Anser anser* (L.)—Scarborough.

querquedulae (L.)—On teal, *Anas c. crecca* L.—Scarborough.

SIPHUNCULATA—SUCKING LICE

The nomenclature adopted is that of Kloet & Hincks "A Check List of British Insects", 1945.

HAEMATOPINIDAE

NEOHAEMATOPINUS Mjoeberg

sciurinus (Mjoeb.)—On red squirrel, *Sciurus vulgaris leucourus* Kerr, Forge Valley.

POLYPLAX Enderlein

spinulosa (Burm.)—On brown rat, *Rattus norvegicus* (Erxl.), common in Scarborough District; on water vole, *Arvicola a. amphibius* (L.), Seamer.

HOPLOPLEURA Enderlein

sciuricola Ferr.—On grey squirrel, *Sciurus carolinensis* Gmel., Forge Valley, Langdale End.

LINOGNATHUS Enderlein

stenopsis (Burm.)—On dog, *Canis familiaris* L., Scarborough.

vituli (L.)—On cattle.

HAEMATOPINUS Leach

asini (L.)—On domestic ass, *Equus asinus* L., Scarborough; on pony, *Equus caballus* L., Scarborough.

suis (L.)—On pig, *Sus scrofa* L., common.

PEDICULIDAE

PEDICULUS Linnaeus

humanus L.—

v. *capitis* De G.—HEAD LOUSE. After a flare-up during the 1939-45 war the number of children affected is steadily declining and grossly infested heads are not at all common. With better standards and more efficient remedies the head louse should soon become a thing of the past.

v. *corporis* De G.—BODY LOUSE. This and the following committant of human degradation are rarely found nowadays. There has only been one case of v. *corporis* in a schoolchild reported during the past 20 years.

PHTHIRIDAE

PHTHIRUS Leach

pubis (L.)—CRAB LOUSE. Apparently almost extinct.

Order EPHEMEROPTERA — MAYFLIES

H. Whitehead

The first list of Mayflies found in Yorkshire was published in the "Entomologists' Monthly Magazine" in 1927. More recent records have been given in the "Naturalist" and in the "Transactions of the Yorkshire Naturalists' Union," Part 36 (1945).

This list is very incomplete as several common species which one would expect to find in the district have not yet been recorded. Most of the species given spend their nymphal stages in rapid streams.

The common names given are those used by fly-fishermen.

The recorders are :

H.B.—H. Britten, fil.

G.B.W.—G. B. Walsh

J.M.B.—J. M. Brown

H.W.—H. Whitehead

E.P.—E. Percival

EPHEMERIDAE

EPHEMERA Linnaeus

vulgata L.—Scalby Sea Cut, 20/6/41, (H.W.).

danica Muell.—"The Mayfly," male imago—"Black Drake," female imago—"Grey Drake," sub-imago—"Green Drake." Fylinghall, 17/6/39, Ramsdale, 25/6/37, Oxbank Wood, 1/7/37, Brockets, 14/6/38, (J.M.B.); Helwath Beck, 6/6/37, (H.B.); Pickering, 6/6/24, (H.W.); Forge Valley, (G.B.W.).

LEPTOPHLEBIIDAE

LEPTOPHLEBIA Westwood

marginata (L.)—Jugger Beck, (E.P.).

PARALEPTOPHLEBIA Lestage

submarginata (Steph.)—Sub-imago—"Turkey Brown." Mill Beck, (E.P.); Brockets, 3/7/39, (J.M.B.).

cincta (Retz.)—Brockets, 5/10/37, (J.M.B.).

HABROPHLEBIA Eaton

fusca (Curt.)—Brockets, 2/7/37, (J.M.B.); Pickering, 2/8/41, (H.W.).

EPHEMERELLIDAE

EPHEMERELLA Walsh

ignita (Poda)—Imago—"Sherry Spinner," sub-imago—"Blue-winged Olive." Brockets, 2/7/37, (J.M.B.); Pickering, 2/8/41, Goathland, 12/7/46, (H.W.).

BAETIDAE

BAETIS Leach

scambus Eat.—Goathland, 30/9/37, (H.B.).

rhodani (Pict.)—Imago—"Red Spinner," sub-imago—"Large Dark Olive." Stainton Dale, (E.P.); Littlebeck, 4/34, (sub-imago), Oxbank Wood, 1/7/37, Ramsdale, 14/6/37, (J.M.B.); Pickering, 6/6/42, (H.W.); Goathland, 30/9/37, Hole of Horcum, 27/6/37, (H.B.); Forge Valley, (G.B.W.).

pumilus (Burm.)—Ramsdale, 14/10/37, Oxbank Wood, 1/7/37, Brocks, 29/9/37, Maw Wyke, 12/6/38, (J.M.B.) ; Pickering, 2/8/41, (H.W.).

CENTROPTILUM Eaton

luteolum (Muell.)—Fylinghall, 12/9/36, Oxbank Wood, 1/7/37, (J.M.B.) ; Goathland, 2/9/47, (H.W.).

pennulatum Eat.—East Row, 20/9/36, Fylinghall, 12/9/36, (J.M.B.).

PROCLOEON Bengtsson

rufulum (Muell.)—East Row, 20/9/36, (J.M.B.) ; Pickering, 2/8/41, (H.W.) ; Hayburn Wyke, (G.B.W.).

ECDYONURIDAE

RHITHROGENA Eaton

semicolorata (Curt.)—Imago—"Yellow Upright." Mill Beck, (E.P.) ; Fylinghall, 20/6/36, Oxbank Wood, 14/9/36, Howdale, 12/6/37, Ramsdale, 14/6/37, Brocks, 26/4/38. Maw Wyke, 12/6/38, (J.M.B.) ; Pickering, 6/6/42, Dalby Beck, 7/6/41, (H.W.).

HEPTAGENIA Walsh

lateralis (Curt.)—Mill Beck, (E.P.) ; Maw Wyke, 25/6/37, Brocks, 2/7/37, Fylinghall, 23/8/39, (J.M.B.).

ECDYONURUS Eaton

venosus (Fabr.)—Sub-imago—"False March Brown." Fylinghall, 20/6/36, Bay Town, 21/6/38, Brocks, 27/5/40, Oxbank Wood, 12/6/40, (J.M.B.) ; Goathland, 2/9/47, (H.W.).

dispar (Curt.)—Sub-imago—"August or Autumn Dun." Fylinghall, 22/9/36, Oxbank Wood, 1/10/37, Brocks, 28/9/37, (J.M.B.) ; Goathland, 2/9/47, (H.W.).

Order ODONATA

DRAGON FLIES and DAMSEL-FLIES

G. B. Walsh

The following initials are used :—

J.M.B.—J. M. Brown

W.J.C.—W. J. Clarke

H.W.D.—H. W. Dobson

G.T.P.—G. T. Porritt

T.N.R.—T. N. Roberts

A.S.T.—A. S. Tetley

E.A.W.—E. A. Wallis

G.B.W.—G. B. Walsh

ZYGOPTERA

COENAGRIIDAE

PYRRHOSOMA Charpentier

nymphula (Sulz.)—LARGE RED DAMSEL-FLY. One specimen at Langdale End, 1912 (A.S.T.) ; several up Bloody Beck, 1913 (E.A.W.) ; Robin Hood's Bay (J.M.B.).

ISCHNURA Charpentier

elegans (v.d. Lind.)—COMMON ISCHNURA. Scarborough Mere, 29/6/13—27/7/13 (T.N.R.) ; Filey, 6/14 (G.T.P.) ; Robin Hood's Bay (J.M.B.).

pumilio (Charp.)—SCARCE PUMILIO. Scarborough Mere, 22/6/13 (T.N.R.).

ENALLAGMA Charpentier

cyathigerum (Charp.)—COMMON BLUE DAMSEL-FLY. Common and somewhat variable. Occurs near many of the permanent pools in the district.

COENAGRION Kirby, W. F.

puellum (L.)—COMMON COENAGRION. Common.

AGRIIDAE

AGRION Fabricius

virgo (L.)—DEMOISELLE. Common and at times abundant in the Derwent at Langdale End, Hilla Green and Forge Valley; common in Low North Beck at Barns Cliff (G.B.W.) ; abundant, Newton Dale, Jugger Beck (E.A.W.) ; Pickering (Y.N.U. Excn., 1946).

splendens (Harris, M.)—BANDED AGRION. Very local, Ganton (E.A.W.).

ANISOPTERA

CORDULEGASTRIDAE

CORDULEGASTER Leach

boltonii (Don.)—GOLDEN-RINGED DRAGON-FLY. Fairly common along the banks of moorland streams. Occasionally it comes down to the lowlands, and on 12/10/49 (a very hot year), a pair were seen flying round Mr. H. W. Dobson's ornamental fish-pond in Stepney Drive, Scarborough.

AESHNIDAE

AESHNA Fabricius

junceae (L.)—COMMON AESHNA. Somewhat local ; Ravenscar (G.B.W.) ; Robin Hood's Bay (J.M.B.) ; Langdale, Bloody Beck (E.A.W.).

cyanea (Muell., O. F.)—SOUTHERN AESHNA. Scarborough (G.T.P., in Vict. County Hist.) ; Throxenby Mere (G.B.W.).

LIBELLULIDAE

LIBELLULA Linnaeus

quadrifasciata L.—FOUR-SPOTTED LIBELLULA. Stepney, 18/4/13 (T.N.R.) ; Forge Valley (G.B.W.).

depressa L.—BROAD-BODIED LIBELLULA. Scarborough (G.T.P.) ; two m. and one f. at Langdale End, 2/6/47 (E.A.W.) ; Forge Valley (G.B.W.).

SYMPETRUM Newman

striolatum (Charp.)—COMMON SYMPETRUM. Occasional ; Throxenby Mere, 11/10/35 (G.B.W.) ; Scarborough, 12/10/49 (H.W.D.) ; Robin Hood's Bay (J.M.B.).

LEUCORRHINIA Brittinger

dubia (v.d. Lind.)—**WHITE-FACED DRAGON-FLY**. In June, 1900, many thousands of this rare dragon-fly were seen coming in from the sea at Scarborough; they were seen from the South Cliff to as far north as Cloughton (W.J.C.). They were identified by an expert of the "Field." Miss Cynthia Longfield does not record it as a migrant in her "Dragonflies of the British Isles," 1937.

Order THYSANOPTERA

THRIPS, BLACK FLY

G. B. Walsh

There are about 200 known British species of this little-known order of minute insects; but no systematic work has been done on them locally, largely owing to the lack of a textbook of diagnostic tables.

They are common enough and, though some few are agricultural pests, the authorities report that few species, if any, do damage of importance to forest trees. We are much indebted to Mr. H. W. Thompson for his help in compiling this list.

AEOLOTHRIPIDAE

AEOLOTHRIPS Haliday

nobilis Priesn.—By sweeping, Fylingdales Moor (G.B.W.).

THRIPIDAE

HELIOTHRIPS Haliday

haemorrhoidalis (Bouché)—**GREENHOUSE THRIPS**. Common under glass (H.W.T.).

LIMOTHRIPS Haliday

denticornis Hal.—**CORN THRIPS**. Common and widely distributed (H.W.T., G.B.W.).

cerealium Hal.—**CORN THRIPS**. Common and widely distributed, and at times a pest (H.W.T., G.B.W.).

APTINOTHRIPS Haliday

rufus (Gmel. in L.)—**GRASS THRIPS**. Not uncommon (H.W.T.).

stylifer Tryb.—Not uncommon on grasses (H.W.T.).

ODONTOTHRIPS Amyot & Serville

ulicis (Hal.)—Abundant and generally distributed on *Ulex* (G.B.W.).

KAKOTHRIPS Williams

robustus (Uzel)—**PEA THRIPS**. On garden peas, runner beans and sweet peas. At times a troublesome pest which it is not easy to eradicate (G.B.W.).

AMBLYTHRIPS Bagnall

ericae (Hal.)—By sweeping, Fylingdales Moor and Scalby High Moor (G.B.W.).

TAENIOTHIRIPS Amyot & Serville

vulgatissimus (Hal.)—On **Brassica**, **Beta**, **Rumex**, **Prunus** and **Pyrus** (H.W.T.).

atratus (Hal.)—**CARNATION THRIPS**. Common (H.W.T., G.B.W.).

inconsequens (Uzel)—**PEAR THRIPS**. Occasional (H.W.T., G.B.W.).

picipes (Zett.)—Abundant on flowers of **Primula vulgaris** in the spring (G.B.W.).

THRIPS Linnaeus

fuscipennis Hal.—**ROSE THRIPS**. On the flowering plants (H.W.T.).

tabaci Lind.—**ONION THRIPS**. Not uncommon on **Compositae**, etc., and in glasshouses (H.W.T.).

angusticeps Uzel—On **Brassica**, **Taraxacum**, etc. (H.W.T.).

HAPLOTHRIPS Amyot & Serville

senecionis Bagn.—On **S. jacobaea** and **S. aquaticus** (H.W.T.).

Order HEMIPTERA — PLANT BUGS

G. B. Walsh

A fair amount of collecting Hemiptera has been done in the area, chiefly by H. Britten fil. in the north and west, and the late James Meikle Brown near Robin Hood's Bay, and the author in the Scarborough district; but much remains to be done, notably in the little-worked and obscurer groups outside the Heteroptera.

Our best thanks are due to Dr. W. E. China for his kind help and advice in the compilation of this list.

The following initials are used :—

E.A.B.	E. A. Butler	W.J.F.	W. J. Fordham
H.B.	H. Britten fil.	E.C.H.	E. C. Horrell
J.M.B.	J. M. Brown	R.L.	R. Lawson
H.J.B.	H. J. Burkill	M.L.T.	M. L. Thompson
W.F.	W. Falconer	G.B.W.	G. B. Walsh
W.W.F.	W. W. Fowler	T.W.	T. Wilkinson

Sub-Order HETEROPTERA—Plant Bugs

The nomenclature used for the Heteroptera is that of Kloet and Hincks' "A Check List of British Insects", 1945.

Series POLYNEURIA

PENTATOMIDAE

PALOMENA Mulsant & Rey

prasina (L.)—Rare; Sleights (H.B.).

PIEZODORUS Fieber*lituratus* (Fabr.)—Common on gorse in many localities.**PENTATOMA** Olivier*rufipes* (L.)—Widely distributed and often common.**ZICRONA** Amyot & Serville*caerulea* (L.)—Widely distributed all over the moors, but not common.

ACANTHOSOMIDAE

ACANTHOSOMA Curtis*haemorrhoidale* (L.)—Common.**ELASMOTETHUS** Fieber*interstinctus* (L.)—Common.**ELASMUCHA** Stal*grisea* (L.)—Local; Hole of Horcum, Helwath Beck (H.B.).

COREIDAE

ENOPLOPS Amyot & Serville*scapha* (Fabr.)—Scarborough on *Ononis* (T.W., G.B.W.); Hayburn Wyke (H.B.); Robin Hood's Bay (J.M.B.).**ALYDUS** Fabricius*calcaratus* (L.)—Scarborough (T.W.). This is the only Yorkshire record and needs confirmation.**MYRMUS** Hahn*miriformis* (Fall.)—Pickering (G.B.W.).Series **PHLOEOBIOTICA**

ARADIDAE

ARADUS Fabricius*depressus* (Fabr.)—Beckhole (H.B.).Series **ONYCHIOPHORA**

LYGAEIDAE

MACROPARIUS Stal*thymi* (Wolff, J. F.)—Fylingdales Moor (H.B.).**CYMUS** Hahn*glandicolor* Hahn—Levisham (H.B.).**KLEIDOCERYS** Stephens*ericae* Horv.—Very common on all the moors of the district.**MACRODEMA** Fieber*micropterum* (Curt.)—Silpho Moor (E.C.H.); Ravenscar, Hazel Beck (H.B.).**PLINTHISUS** Stephens*brevipennis* (Latr.)—Cloughton (E.C.H.).**STYGNOCORIS** Douglas & Scott*rusticus* (Fall.)—Near Sleights (M.L.T.).*pedestris* (Fall.)—At plant roots, Robin Hood's Bay (J.M.B.); Levisham, Hole of Horcum (H.B.).

TRAPEZONOTUS Fieber*arenarius* (L.)—Common and widely distributed.**DRYMUS** Fieber*sylvaticus* (Fabr.)—Common.var. *ryei* Doug. & Scott—Under *Calluna*, Ramsdale (J.M.B.).*brunneus* (Sahlb., R. F.)—Apparently not common; Hayburn Wyke (G.B.W.); Ramsdale, a single specimen (J.M.B.).*piceus* (Flor)—Scarborough (R.L.).**TAPHROPELTUS** Stal*contractus* (Herr.-Sch.)—Ravenscar (J.M.B.).**SCOLOPOSTETHUS** Fieber*affinis* (Schill.)—Probably common, though there are few records.*thomsoni* Reut.—Forge Valley, Hayburn Wyke (G.B.W.); Beckhole (H.B.).*decoratus* (Hahn)—Common under *Calluna*.**GASTRODES** Westwood*grossipes* (De G.)—Silpho Moor, Raincliffe Wood (G.B.W.).
Probably widely distributed.**Series ANONYCHIA****PIESMIDAE****PIESMA** Lepeletier & Serville*maculata* (Cast.)—Egton Bridge (H.B.).**TINGIDAE****ACALYPTA** Westwood*brunnea* (Germ.)—Scarborough in moss on tree trunks in winter and spring (T.W.).**TINGIS** Fabricius**S. LASIOTROPIS** Stal*reticulata* Herr.-Sch.—Scarborough (R.L.).**S. TINGIS** s.s.*cardui* (L.)—Common on thistles.**REDUVIIDAE****EMPICORIS** Wolff, J. F.*culiciformis* De G.—Local; Raincliffe Wood (G.B.W.).**NABIDAE****NABIS** Latreille**S. NABIS** s.s.*ferus* (L.)—Stony Marl Moor, Forge Valley (G.B.W.); Raincliffe Wood, Beedale (E.C.H.).*flavomarginatus* Scholtz—Staintondale (W.J.F.); Seamer (G.B.W.); Ramsdale, Robin Hood's Bay, the rare macropterous form, 11/7/43 (J.M.B.).*rugosus* (L.)—Widely distributed.*ericetorum* Scholtz—Common among *Calluna*.*brevis* Scholtz—Sleights (H.B.).**S. DOLICHONABIS** Reuter*limbatus* Dahlb.—Common and widely distributed.

CIMICIDAE

CIMEX Linnaeus

lectularius L.—Only too common in houses and ships.

columbarius Jenyns—Common in dovecote, Scarborough (G.B.W.).

ANTHOCORIDAE

TEMNOSTETHUS Fieber

pusillus (Herr.-Sch.)—Common and widely distributed, chiefly the brachypterous form.

ELATOPHILUS Reuter

nigricornis (Zett.)—Sleights (H.B.).

ANTHOCORIS Fallén

confusus Reut.—Common.

nemoralis (Fabr.)—Common.

sarothamni Doug. & Scott—Ravenscar (J.M.B.).

nemorum (L.)—Common, will "bite" at times.

TETRAPHLEPS Fieber

bicuspis (Herr.-Sch.)—Forge Valley, Silpho Moor (G.B.W.); Levisham (H.B.); Fylinghall (J.M.B.).

ACOMPOCORIS Reuter

pygmaeus (Fall.)—Common and widely distributed.

ORIUS Wolff, J. F.

majusculus (Reut.)—Levisham, Beckhole (H.B.).

LYCTOCORIS Hahn

campestris (Fabr.)—Common and generally distributed.

XYLOCORIS Dufour

cursitans (Fall.)—Egton Bridge (H.B.).

LORICULIDAE

LORICULA Curtis

pselaphiformis Curt.—Egton (J.M.B.).

elegantula (Baer.)—Widely distributed and common on tree trunks in the Robin Hood's Bay area from August to October, 1940; all female specimens (J.M.B.).

MIRIDAE

PITHANUS Fieber

märkeli (Herr.-Sch.)—Robin Hood's Bay (J.M.B.); not common.

PANTILIUS Curtis

tunicatus (Fabr.)—Widely distributed.

PHYTOCORIS Fallén

tiliae (Fabr.)—Rather common and generally distributed.

longipennis Flor — Seamer Moor (W.J.F.); Raincliffe Wood (G.B.W.); Levisham, Goathland (H.B.).

pini Kirschb.—Seamer Moor (G.B.W.); Ramsdale (J.M.B.).

varipes Boh.—Hayburn Wyke (G.B.W.); Ravenscar (H.B.).

ulmi (L.)—Hayburn Wyke (G.B.W.); Robin Hood's Bay (J.M.B.).

MEGACOELUM Fieber

infusum (Herr.-Sch.)—Randymere (H.B.); occasional on oak, Ravenscar (J.M.B.).

ADELPHOCORIS Reuter*seticornis* (Fabr.)—Filey (W.W.F.).**CALOCORIS** Fieber*ochromelas* (Gmel.)—Common.*sexguttatus* (Fabr.) v. *insularis* Reut.—Common on nettles.*alpestris* (Meyer-Duer)—Common in Raincliffe Wood and Forge Valley (G.B.W.); less common, Oxbank Wood (J.M.B.).*roseomaculatus* (De G.)—Robin Hood's Bay, plentiful on *Centaurea* (J.M.B.).*norvegicus* (Gmel.)—Scarborough (G.B.W.); Ravenscar (H.B.).**MIRIS** Fabricius*striatus* (L.)—Oaks, Oxbank Wood, Ramsdale (J.M.B.).**DICHROOSCYTUS** Fieber*rufipennis* (Fall.)—Ramsdale (J.M.B.).**LYGUS** Hahn**S. LYGUS** s.s.*pabulinus* (L.)—Hayburn Wyke, Forge Valley (G.B.W.).**S. NEOLYGUS** Knight*viridis* (Fall.)—Forge Valley on *Filipendula ulmaria*, Hayburn Wyke on nettles (G.B.W.); Robin Hood's Bay (J.M.B.).*contaminatus* (Fall.)—Hayburn Wyke (G.B.W.); common at Robin Hood's Bay (J.M.B.).*spinolae* (Meyer-Duer)—Grosmont (J.M.B.).*lucorum* (Meyer-Duer)—Goathland (H.B.).*rubricatus* (Fall.)—Seamer Moor (G.B.W.); Hole of Horcum, Sleights (H.B.).*cervinus* (Herr. Sch.)—Scarborough (T.W.); Ramsdale, Ravenscar (J.M.B.).**EXOLYGUS** Wagner, E,*pratensis* (L.)—Very common.**S. ORTHOPS** Fieber*campestris* (L.)—Scarborough (T.W.).*kalmii* (L.)—Forge Valley (G.B.W.); Egton Bridge (H.B.).**PLESIOCORIS** Fieber*rugicollis* (Fall.)—Forge Valley, Seamer (G.B.W.); common on sallow, Fylinghall, Robin Hood's Bay (J.M.B.).**CAMPTOZYGUM** Reuter*pinastri* (Fall.)—Hole of Horcum (H.B.).**CHARAGOSCHILUS** Fieber*gyllenhalii* (Fall.)—Levisham, Beckhole (H.B.).**LIOCORIS** Fieber*tripustulatus* (Fabr.)—Common and generally distributed.**RHOPALOTOMUS** Fieber*ater* (L.)—Common.**STENODEMA** Laporte de Castelnau**S. BRACHYSTIRA** Fieber*calcaratum* (Fall.)—Common.**S. STENODEMA** s.s.*laevigatum* (L.)—Scarborough (T.W., G.B.W.); Fylinghall*holsatum* (Fabr.)—Common. (J.M.B.).

TRIGONOTYLUS Fieber*ruficornis* (Geoffr.)—Common among grass.**TERATOCORIS** Fieber*viridis* Doug. & Scott—Robin Hood's Bay, Hole of Horcum, Fylingdales Moor, Levisham, Helwath Beck (H.B.).*saundersi* Doug. & Scott—Sleights (M.L.T.).**LEPTOPTERNA** Fieber*ferrugata* (Fall.)—Common.*dolabrata* (L.)—Common.**MONALOCORIS** Dahlbom*filicis* (L.)—Abundant and generally distributed.**BRYOCORIS** Fallén*pteridis* (Fall.)—Plentiful, both long- and short-winged forms.**DICYPHUS** Fieber*constrictus* (Boh.)—Raincliffe Wood (G.B.W.); Robin Hood's Bay (J.M.B.).*epilobii* Reut.—Common on *Epilobium*.*errans* (Wolff, J. F.)—Scarborough (T.W.).*stachydis* Reut.—Plentiful.*pallidicornis* (Fieb.)—Cloughton (G.B.W.); Sleights (H.B.).*globulifer* (Fall.)—Scarborough (T.W.); Raincliffe Wood (G.B.W.); Beckhole (H.B.).*annulatus* (Wolff, J. F.)—Scarborough (G.B.W.).**CAMPYLONEURA** Fieber*virgula* (Herr.-Sch.)—Common.**CYLLECORIS** Hahn*histrionicus* (L.)—Common and generally distributed.**DRYOPHILOCORIS** Reuter*flavoquadrimaculatus* (De G.)—Widely distributed, but not as common as the last.**BLEPHARIDOPTERUS** Kolenati*angulatus* (Fall.)—Common.**GLOBICEPS** Lepeletier & Serville*dispar* (Boh.)—At roots of rushes on moor above Raw (J.M.B.).**MECOMMA** Fieber*ambulans* (Fall.)—Common.**CYRTORHINUS** Fieber*caricis* (Fall.)—At roots of rushes, widely distributed.**ORTHOTYLUS** Fieber*nassatus* (Fabr.)—Rare; one specimen at Fylinghall, 15/9/36 (J.M.B.).*prasinus* (Fall.)—Brockets, Robin Hood's Bay (J.M.B.).**MELANOTRICHUS** Reuter*virescens* (Doug. & Scott)—Common on *Sarothamnus*.*adenocarpis* (Perr.)—On *Sarothamnus*, Grosmont (J.M.B.); Hayburn Wyke (G.B.W.).*ericetorum* (Fall.)—Common on *Calluna*.

CAPSUS Fabricius

meriopterus (Scop.)—Raw, on mint in garden, Robin Hood's Bay (J.M.B.).

HETEROCORDYLUS Fieber

leptocerus (Kirschb.)—Common on *Sarothamnus*.

MALACOCORIS Fieber

chlorizans (Panz.)—Common on hazel.

ORTHOCEPHALUS Fieber

mutabilis (Fall.)—Forge Valley (G.B.W.).

STRONGYLOCORIS Blanchard

leucocephalus (L.)—Scarborough, abundant on cliffs on short grass and *Vicia cracca* in July (T.W.).

CONOSTETHUS Fieber

roseus (Fall.)—Scarborough (T.W.).

MACROTYLUS Fieber

paykulli (Fall.)—Scarborough (T.W.); Burniston Bay (G.B.W.); Robin Hood's Bay (J.M.B.).

HARPOCERA Curtis

thoracica (Fall.)—Forge Valley (G.B.W.); Howdale, Ramsdale

ORTHONOTUS Stephens

(J.M.B.).

rufifrons (Fall.)—Ramsdale (J.M.B.).

PHYLUS Hahn

palliceps Fieb.—Brockets (J.M.B.).

coryli (L.)—Brockets (J.M.B.).

PSALLUS Fieber

ambiguus (Fall.)—Forge Valley, Hayburn Wyke (G.B.W.); Robin Hood's Bay (J.M.B.).

betuleti (Fall.)—Scarborough (T.W.); Fylinghall, Brockets (J.M.B.).

variabilis (Fall.)—Common.

lepidus Fieb.—Spring Hill, Robin Hood's Bay (J.M.B.).

alnicola Doug. & Scott—Fylinghall (J.M.B.); Grosmont, Hole of Horcum (H.B.).

falleni Reut.—Forge Valley, Seamer Moor, Hayburn Wyke (G.B.W.).

varians (Herr.-Sch.)—Raincliffe Wood (G.B.W.).

roseus (Fabr.)—Widely distributed.

salicellus (Meyer-Duer)—Sleights, Helwath Beck (H.B.).

ATRACTOTOMUS Fieber

magnicornis (Fall.)—Seamer Moor, Forge Valley, Cloughton (G.B.W.); Goathland, Ramsdale (J.M.B.).

PLAGIOGNATHUS Fieber

albipennis (Fall.)—Forge Valley (G.B.W.).

chrysanthemi (Wolff, J. F.)—Widely distributed and common.

arbustorum (Fabr.)—Very common.

CHLAMYDATUS Curtis

wilkinsoni (Doug. & Scott)—Scarborough (T.W.).

ASCIODEMA Reuter

obsoletum (Fieb.)—Common on *Ulex*.

Series TRICHOTELOCERA

CRYPTOSTEMMATIDAE

CRYPTOSTEMMA Herrich-Schaeffer

alienum Herr.-Sch.—Scarborough (T.W.); fairly common in shingle beds of the R. Derwent at Hilla Green and of other streams (G.B.W.).

Series HYDROBIOTICA

HYDROMETRIDAE

HYDROMETRA Latreille

stagnorum (L.)—Seamer Carr (E.C.H.).

GERRIDAE

GERRIS Fabricius

costae (Herr.-Sch.)—Uncommon; only on moorland pools above Robin Hood's Bay (J.M.B.); Hole of Horcum, Goathland (H.B.).

thoracicus Schumm.—Somewhat uncommon; not on moorland pools, but on both running and standing water, Fylingdales, Stoup Beck (J.M.B.).

gibbifer Schumm.—Seamer Moor (W.J.F.); commonest species of the genus in Fylingdales (J.M.B.).

lacustris (L.)—Throxenby Mere (E.C.H.); Seamer Moor (G.B.W.); somewhat uncommon, Fylingdales (J.M.B.).

odontogaster (Zett.)—Goathland (H.B.).

argentatus Schumm.—Goathland (H.B.).

VELIIDAE

MICROVELIA Westwood

reticulata (Burm.)—Seamer Moor (E.C.H.).

VELIA Latreille

caprai Tam.—Very common on streams.

SALDIDAE

SALDA Fabricius

muelleri Gmel.—Scarborough (R.L.); Goathland under **Calluna**, one example (J.M.B.).

SALDULA Van Duzee

scotica (Curt.)—Helwath Beck (H.B.).

orthochila (Fieb.)—Harwood Dale (G.B.W.).

saltatoria (L.)—Common.

c-album (Fieb.)—Common.

CHARTOSCIRTA Stal

cincta (Herr.-Sch.)—Fylingdales, Robin Hood's Bay (J.M.B.).

cocksii (Curt.)—Ringing Keld Bog (E.C.H.).

NEPIDAE

NEPA Linnaeus

cinerea L.—Somewhat uncommon.

NOTONECTIDAE

NOTONECTA Linnaeus

glauca L.—Common, but less so on the moors.

obliqua Gall.—Fairly common.

maculata Fabr.—Very rare; Fylingdales (J.M.B.).

Series SANDALIORHYNCHA

CORIXIDAE

GLAENOCORISA Thomson, C. G.

propinqua (Fieb.)—On the moors above Robin Hood's Bay (J.M.B.).

CORIXA Geoffroy

S. VERMICORIXA Walton

lateralis Leach—Evan Howe Pond, Robin Hood's Bay (J.M.B.).

nigrolineata (Fieb.)—Common.

concinna (Fieb.)—Rare; Fylingdales (J.M.B.).

S. CALLICORIXA White.

praeusta (Fieb.)—Ugthorpe Moor (H.B.); not common, Fylingdales (J.M.B.).

wollastoni (Doug. & Scott)—Common, especially on the moorland, but also at much lower elevations, Fylingdales (J.M.B.).

S. RETROCORIXA Walton

venusta (Doug. & Scott)—On the moors in *Sphagnum* pools (J.M.B.).

limitata (Fieb.)—Uncommon; Fylingdales (J.M.B.).

S. SUBSIGARA Stichel

scotti (Fieb.)—Rare; Fylingdales (J.M.B.).

fossarum Leach—Goathland (H.B.).

distincta (Fieb.)—Rare; Fylingdales (J.M.B.).

S. HALICORIXA Walton

stagnalis Leach—Biller Howe Dale (G.B.W.).

S. ARCTOCORISA Wallengren

germari (Fieb.)—Moors above Robin Hood's Bay, 9/10/43 (J.M.B.).

S. HESPEROCORIXA Kirkaldy

castanea (Thoms., C. G.)—Moors above Robin Hood's Bay, 8/10/43 (J.M.B.).

moesta (Fieb.)—East Ayton (G.B.W.); Fylingdales (J.M.B.).

linnei (Fieb.)—Robin Hood's Bay, Fylingdales, very rare (J.M.B.).

sahlbergi (Fieb.)—Howdale, abundant Fylingdales (J.M.B.).

S. CORIXA s.s.

punctata (Ill.)—Abundant at Ravenscar (G.B.W.); common, Robin Hood's Bay area (J.M.B.).

dentipes (Thoms., C. G.)—Very rare; one specimen, Fylingdales (J.M.B.).

MICRONECTA Kirkaldy

minutissima (L.)—Scarborough (R.L.); Scalby Beck, plentiful among confervae at mouth (G.B.W.); Robin Hood's Bay, in enormous numbers in the muddy shallows of Brockets Beck (J.M.B.).

Sub-order HOMOPTERA—Frog Hoppers, Leaf Hoppers etc.

The classification of the Homoptera, with the exception of the Chermidae (Psyllidae) is that of Dr. W. E. China, A Check List of the British Hemiptera Auchenorrhyncha, Ent. Mon. Mag., 86, 1950, pp. 243-251.

Series AUCHENORHYNCHA

CERCOPIDAE

APHROPHORA Germar

spumaria (L.)—Common and generally distributed.

PHILAENUS Stal

leucophthalmus (L.)—Abundant and in great variety. A pink form occurs on *Calluna* near the Falcon Inn.

NEOPHILAENUS Haupt

lineatus (L.)—Common and generally distributed.

MEMBRACIDAE

CENTROTUS Fabricius

cornutus (L.)—Rare; on the railway banks above Pickering (G.B.W.).

CICADELLIDAE

ULOPA Fallén

reticulata (Fabr.)—Common on *Calluna* on the moors.

MEGOPHTHALMUS Curtis

scanicus (Fall.)—Robin Hood's Bay (J.M.B.); Hayburn Wyke (G.B.W.).

TETTIGELLA China & Fennah

viridis (L.)—Common by sweeping in damp places.

forma arundinis (Germ.)—Biller Howe Dale (G.B.W.).

EVACANTHUS Lepeletier & Serville

interruptus (L.)—Common.

IDIOCERUS Lewis, R. H.

stigmatalis Lew., R. H.—Sleights, Grosmont, etc. (J.M.B.).

lituratus (Fall.)—Levisham, Goathland (H.B.); Robin Hood's Bay, very common (J.M.B.).

elegans Flor—Sleights (H.B.); Hayburn Wyke (G.B.W.).

confusus Flor—Common and widely distributed.

albicans Kirschb.—Sleights (J.M.B.); Hayburn Wyke (G.B.W.).

IASSUS Fabricius

lanio (L.)—Common.

ONCOPSIS Burmeister

alni (Schr.)—Common on alders.

flavicollis (L.)—Common on birch.

tristis (Zett.)—Widely distributed.

AGALLIA Curtis

puncticeps (Germ.)—Raincliffe Wood, Cayton Bay, Pickering (G.B.W.).

brachyptera (Boh.)—North Cliff, Scarborough in newly-cut grass at end of June (T.W.); East Ayton in cut grass. (G.B.W.).

ANACERATAGALLIA Zachvatkin

ribauti Oss.—Grosmont, Levisham (H.B.).

EUELIX Germar

cuspidata (Fabr.)—At roots of grass, Ramsdale, Howdale, Robin Hood's Bay (J.M.B.).

APHRODES Curtis

- bicinctus* (Schr.)—Common and widely distributed.
bifasciatus (L.)—Common and widely distributed at roots of *Calluna*.
tricinctus Curt.—Hole of Horcum, Levisham (H.B.).
albifrons (L.)—Common, especially at roots of *Calluna*.
flavostriatus (Don.)—Scalby (G.B.W.).

DORATURA Sahlberg, J.

- stylata* (Boh.)—Robin Hood's Bay, Howdale (J.M.B.).

DELTOCEPHALUS Burmeister

- pulicaris* (Fall.)—Robin Hood's Bay (J.M.B.).

TURRUTUS Ribaut

- socialis* (Flor)—Not common, Danes Dyke (J.M.B.).

ERRASTUNUS Ribaut

- ocellaris* (Fall.)—Forge Valley (G.B.W.); Sleights (H.B.); Goathland, Robin Hood's Bay (J.M.B.).

ADARRUS Ribaut

- multinotatus* (Boh.)—Recorded from "N.E. Yorks." (E.A.B.).

JASSARGUS Zachvatkin

- pseudocellaris* (Flor)—Plentiful in both forms in Robin Hood's Bay district (J.M.B.); Hole of Horcum (H.B.).

ARTHALDEUS Ribaut

- pascuellus* (Fall.)—Pickering, East Ayton (G.B.W.).

PSAMMOTETTIX Haupt

- confinis* (Dahlb.)—Plentiful among grass, Danes Dyke (J.M.B.).

ALLYGUS Fieber

- mixtus* (Fabr.)—Ramsdale, Brockets, on ivy, Fylinghall (J.M.B.); Helwath Beck (H.B.).

EUSCELIS Brullé

- lineolatus* Brullé—Filey (W.J.F.); among grass near Robin Hood's Bay (J.M.B.); Grosmont (H.B.).

- plebejus* (Fall.)—Common.

- obsoletus* (Kirschb.)—Near the Falcon Inn (W.J.F.).

- var. *piceus* Scott—Scarborough (T.W.).

STREPTANUS Ribaut

- sordidus* (Zett.)—Forge Valley (G.B.W.).

- marginatus* (Kirschb.)—Fylinghall, cliffs at Robin Hood's Bay (J.M.B.).

HARDYA Edwards, J.

- melanopsis* (Hardy, J.)—Howdale (J.M.B.).

MOCYDIA Edwards, J.

- crocea* (Herr.-Sch.)—Among dry grass, Scalby High Moor (G.B.W.).

THAMNOTETTIX Zetterstedt

- confinis* Zett.—Common.

PSEUDOTETTIX Ribaut

- subfuscus* (Fall.)—Raincliffe Wood (G.B.W.); Brockets (J.M.B.); Sleights (H.B.).

LAMPROTETTIX Ribaut

- octopunctatus* (Schr.)—Not common, Fylinghall (J.M.B.).

CICADULA Zetterstedt

quadrinotata (Fabr.)—East Ayton, Pickering (G.B.W.); Randymere, Hole of Horcum, Levisham (H.B.).

quinquenotata (Boh.)—Seamer (G.B.W.); Robin Hood's Bay (J.M.B.).

persimilis (Edw., J.)—Goathland (H.B.); Ramsdale (J.M.B.).

ELYMANA De Long

virescens (Fabr.)—Common.

SONRONIUS Dorst

quadripunctatus Fall.—Forge Valley (G.B.W.); fairly plentiful at Robin Hood's Bay (J.M.B.).

MACROSTELLES Fieber

sexnotatus (Fall.)—Seamer (G.B.W.).

ERYTHRONEURA Fitch

angusta (Leth.)—Grosmont, Goathland, Brockets (J.M.B.).

var. *rubrinervis* Edw., J.—Rare; Brockets on hawthorn (J.M.B.).

tiliae (Geoffr.)—Goathland (H.B.); Fylinghall (J.M.B.).

flammigera (Geoffr.)—Common.

alneti (Dahlb.)—Cayton Bay (G.B.W.); Helwath Beck (H.B.).

s. sp. *coryli* (Toll.)—Littlebeck (H.B.).

ZYGINIDIA Haupt

scutellaris (Herr.-Sch.)—Robin Hood's Bay (J.M.B.).

TYPHLOCYBA Germar

cruenta Herr.-Sch. var. *douglasi* Edw., J.—Common.

carri Edw., J.—Fylinghall (J.M.B.); Sleights (H.B.).

decempunctata (Fall.)—Sleights, Helwath Beck (H.B.).

sempunctata (Fall.)—Common.

quercus (Fabr.)—Common.

bifasciata Boh.—Common.

salicicola (Edw., J.)—Sleights (H.B.).

callosa Then var. *distincta* Edw., J.—Forge Valley (G.B.W.).

rosae (L.)—Common.

S. EDWARDSIANA Jazykov

avellanae (Edw., J.)—Sleights (H.B.).

crataegi (Dougl.)—Common.

frustrator (Edw., J.)—Sleights, Goathland (H.B.).

geometrica (Schrank)—Widely distributed.

lethierryi (Edw., J.)—Goathland (H.B.); Robin Hood's Bay

RIBAUTIANA Zachvatkin

ulmi (L.)—Abundant.

debilis (Doug.)—Sleights, Goathland (H.B.).

tenerrima (Herr.-Sch.)—Common.

CICADELLA Dumeril

vittata (L.)—Common.

notata (Curt.)—Helwath Beck (H.B.).

urticae (Fabr.)—Common.

var. *leucocnema* (Osh.)—Hayburn Wyke (G.B.W.).

cyclops (Mats.)—Goathland (H.B.).

stachydearum (Hardy, J.)—Common.

- aurata* (L.)—Common.
atropunctata (Goeze)—Common.
signatipennis (Boh.)—Common.
tenella (Fall.)—Sleights (H.B.).

EURHADINA Haupt

- pulchella* (Germ.)—Common.
concinna (Germ.)—Widely distributed.

EMPOASCA Walsh**S. KYBOS** Fieber

- smaragdula* (Fall.)—Common.

S. CHLORITA Fieber

- decipiens* (Paoli)—Common.

ALEBRA Fieber

- albostriella* (Fall.)—Danes Dyke, Fylinghall (J.M.B.); Raincliffe Wood (G.B.W.).
wahlbergi (Boh.)—Brockets (J.M.B.).

DIKRANEURA Hardy, J.

- mollicula* (Boh.)—Ramsdale, Ravenscar (J.M.B.); Helwath Beck (H.B.).
variata Hardy, J.—Ramsdale, beneath *Calluna*, Robin Hood's Bay (J.M.B.); Sleights, Helwath Beck (H.B.).

CIXIIDAE

CIXIUS Latreille**S. TACHYCIXIUS** Wagner, W.

- pilosus* (Ol.)—Common.
 var. *albicinctus* (Germ.)—Fylinghall (J.M.B.).
 var. *infumatus* Fieb.—Fylinghall (J.M.B.).

S. CIXIUS s.s.

- nervosus* (L.)—Danes Dyke, Ramsdale, Brockets (J.M.B.).

S. PARACIXIUS Wagner, W.

- distinguendus* Kirschb.—Seamer Moor (G.B.W.); common on salallows, Fylinghall (J.M.B.); Goathland (H.B.).

S. CERATOCIXIUS Wagner, W.

- cunicularius* (L.)—Forge Valley, Seamer Moor (G.B.W.).

S. SCIOCIXIUS Wagner, W.

- similis* Kirschb.—Seamer Moor (G.B.W.).

DELPHACIDAE

STENOCRANUS Fieber

- minutus* (Fabr.)—Ramsdale, 12/6/43 (J.M.B.).

KELISIA Fieber

- vittipennis* (Sahlb., J.)—Ramsdale (W.J.F.); among grass, Brockets (J.M.B.); Hole of Horcum (H.B.).

CONOMELUS Fieber

- anceps* (Germ.)—Common and widely distributed among rushes.

CALLIGYPONA Sahlberg, J.

- discolor* (Boh.)—Hayburn Wyke, Ellerburn (G.B.W.); Robin Hood's Bay, Fylinghall (J.M.B.).
pellucida (Fabr.)—Pickering, Robin Hood's Bay (J.M.B.).

dubia (Kirschb.)—Brockets, Maw Wyke, Fylinghall (J.M.B.).
forcipata (Boh.)—Rather plentiful, Howdale, Robin Hood's Bay, Fylinghall (J.M.B.).

leptosoma (Flor)—Fylinghall (J.M.B.).

denticauda (Boh.)—Robin Hood's Bay, not common; Ramsdale (J.M.B.).

fairmairei (Perr.)—Goathland, Ramsdale (J.M.B.).

DICRANOTROPIS Fieber

hamata (Boh.)—Cayton Bay (G.B.W.); Ramsdale (J.M.B.).

CRIMOMORPHUS Curtis

albomarginatus Curt.—Common and widely distributed.

moestus (Boh.)—A few specimens in rough grass near edge of moors near Ramsdale (J.M.B.).

STIROMA Fieber

pteridis (Boh.)—Robin Hood's Bay, Brockets (J.M.B.).

affinis (Fieb.)—Ellerburn, Forge Valley (G.B.W.); Newton Beck, Robin Hood's Bay (J.M.B.).

Series STERNORHYNCHA

CHERMIDAE

LIVIA Latreille

juncorum (Latr.)—Widely distributed.

STROPHINGIA Enderlein

ericae (Curt.)—Scalby High Moor (G.B.W.); probably widely distributed and common.

APHALARA Foerster

calthae (L.)—On larch, Ramsdale (J.M.B.).

exilis (Web. & Mohr)—Scarborough (T.W.).

PSYLLOPSIS Loew, F.

fraxinicola (Foerst.)—Raincliffe Wood, Hayburn Wyke (G.B.W.); Littlebeck (H.B.).

fraxini (L.)—Littlebeck (H.B.); Fylinghall (J.M.B.); Scarborough, common (G.B.W.).

CHERMES Linnaeus

crataegi (Schr.)—Egton Bridge (Y.N.U. Mtg.); Littlebeck, Helwath Beck (H.B.).

costalis (Flor)—Fylinghall (J.M.B.).

peregrinus (Foerst.)—Common and generally distributed.

mali Schmidb.—Widely distributed.

alni L.—Common and generally distributed.

foersteri (Flor)—Hayburn Wyke (G.B.W.); Littlebeck, Goathland, Helwath Beck (H.B.).

betulae L.—Sleights (H.B.).

buxi L.—Common on box.

hippophaes (Foerst.)—Common on sea-buckthorn at Scarborough and Cornelian Bay (G.B.W.).

melanoneura (Foerst.)—Pickering, Robin Hood's Bay (J.M.B.); Sleights, Goathland (H.B.); Raincliffe Wood (G.B.W.).

nigrita Zett.—Goathland, Sleights (H.B.).

ambiguus (Foerst.)—Hayburn Wyke (G.B.W.).

spartii (Guer.)—Common on broom, Staintondale (G.B.W.); Ravenscar (J.M.B.).

ARYTAINA Foerster

genistae (Latr.)—Common on broom, Grosmont (J.M.B.) ; Beckhole (H.B.).

TRICHOCHERMES Kirkaldy

walkerii Foerst.—Gall on *Rhamnus catharticus*, Scalla Moor, Pickering (H.J.B.) ; Rillington, plentiful at one spot (W.F.).

TRIOZA Foerster

remota Foerst.—Pickering, Goathland, Ramsdale (J.M.B.).

urticae (L.)—Common and widely distributed.

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APHIDIDAE — GREEN-FLIES

The author's thanks are due to Dr. F. Laing and the late Prof. F. V. Theobald for their assistance in naming many of the following species, and to Dr. J. H. Fidler for checking and adding to the list and for much valuable criticism.

The following initials are used :—

H.B.	H. Britten fil.	F.V.T.	F. V. Theobald
W.F.	W. Falconer	G.B.W.	G. B. Walsh
J.H.F.	J. H. Fidler		

MACROSIPHUM Passerini

S. MACROSIPHUM s.s.

gei (Koch, C. L.)—On *Digitalis purpurea*, Falling Foss, 14/7/28; on roses and cultivated lettuce, nymphs, 20/7/28; apparently common (G.B.W.).

euphorbiae (Thom., C. A.)—Scarborough, indoors on tulips, 4/31 (G.B.W.).

funestum (Macch.)—On *Rubus* sp., Pickering, 14/5/49 (J.H.F.).

rosae (L.)—Common on roses.

S. SITOBIIUM Mordvilko

fragariae (Walk.)—On bramble, Falling Foss, 14/7/28; apterae on young shoots, 23/8/28 (G.B.W.).

avenae (Fabr.)—Apterous females on oats, Sawdon, 26/7/28; on grasses, Fyling Hall, 29/8/29 (G.B.W.).

MACROSIPHONIELLA Del Guercio

sanborni (Gill.)—Fairly common on chrysanthemums under glass.

millefolii (De G.)—Common on *Achillea*. Apterous and alate females, larvae and nymphs, Scarborough, 23/7/28; Sawdon, 26/7/28; Langdale End, larvae, 23/8/28 (G.B.W.); Filey (F.V.T., Brit. Aph., I. p. 161).

tanacetaria (Kalt.)—Larvae and alatae on *Tanacetum*, mouth of Scalby Beck, 24/6/28 (G.B.W.).

METOPOLOPHIUM Mordvilko

dirhodum (Walk.)—On cultivated roses, Scarborough, apterae, 22/7/28; Fyling Hall, 29/6/29 (G.B.W.); Filey (F.V.T., Brit. Aph., I. p. 161); on potatoes, Cawthorn, 30/7/47 (J.H.F.).

ACYRTHOSIPHON Mordvilko

onobrychidis Fonsc.—On white clover, larvae, nymphs and alatae, Staintondale and Scarborough, 21/7/28; on broom, Staintondale, apterae, 21/7/28 (G.B.W.).

S. MICROLOPHIUM Mordvilko

carnosum (Buckt.)—Very common on nettles everywhere.

pelargonii (Kalt.)—On *Pelargonium* indoors, Scarborough, apterae and young larvae, 21/8/28 (G.B.W.).

DACTYNOTUS Rafinesque**S. DACTYNOTUS** s.s.

tussilaginis (Walk.)—Common on *Tussilago*.

S. UROMELAN Mordvilko

campanulae (Kalt.)—On *Campanula rotundifolia*, Langdale End, apterae and larvae, 23/8/28 (G.B.W.).

solidaginis (Fabr.)—On *Solidago*, Raincliffe Wood, apterae and larvae, 6/9/28 (G.B.W.).

jaceae (L.)—On *Centaurea nigra*, apterae, alatae, larvae and nymphs, 23/7/28, Scarborough; Fyling Hall, 29/6/29 (G.B.W.).

MEGOURA Buckton

papilionacearum Lind.—Alatae and larvae on pods of *Vicia cracca*, Sawdon Dale, 26/7/28; on *Vicia sepium*, abundant, 29/6/29, Fyling Hall (G.B.W.).

HYPEROMYZUS Boerner, C.

lactucae (L.)—Common on lettuce and *Sonchus*, Scarborough, alatae and larvae, 22/7/28 (G.B.W.).

AMPHOROPHORA Buckton**S. AMPHOROPHORA** s.s.

digitalisii Theob.—Apterae found on *Digitalis purpurea* at Falling Foss, 17/7/28 (G.B.W.), were described as new to science (F.V.T., Ent. Mo. Mag., LXIV., 226 - 1928); Theobald says "distinct from anything I know", but Kloet and Hincks refer the species doubtfully to *A. picridis* Boern., C.

ampullata Buckt.—On ferns, Raincliffe Wood, apterae, 3/9/28; apterae, Forge Valley, 8/9/28; these laid a number of (white) eggs in the tin in which I brought them home (G.B.W.).

S. EUNECTAROSIPHON Del Guercio

rubi (Kalt.)—On *Rubus*, Fyling Hall, 29/6/29 (G.B.W.).

MYZODES Mordvilko

ligustri (Kalt.)—Filey, on privet, 14/8/92 (F.V.T., Brit. Aph., 1. 217).

CRYPTOMYZUS Oestlund

ribis (L.)—Abundant all over the district, at times doing a good deal of damage.

CAPITOPHORUS van der Goot

similis v. d. Goot—Apterae and larvae abundant under leaves of *Tussilago*, 11/9/28, Scarborough Mere (G.B.W.).

CORYLOBIUM Mordvilko

avellanae (Schr.)—Common on hazel all over the district.

MYZAPHIS van der Goot

rosarum (Kalt.)—On cultivated roses, Scarborough (G.B.W.).

ELATOBium Mordvilko

abietina (Walk.)—A serious pest to both forest and ornamental spruces and firs to which at times it does much damage.

OVATUS van der Goot

menthae (Buckt.)—Alatae on garden mint, 1/7/28, Scarborough (G.B.W.).

PHORODON Passerini

pruni (Scop.)—On **Prunus spinosa**, Beckhole, 18/7/36; Littlebeck, 13/9/36 (H.B.); common in the Scarborough district (G.B.W.).

MYZUS Passerini

ornatus Laing—On crocus in the house, 17/2/33 (G.B.W. fide F. Laing).

cerasi (Fabr.)—Beckhole, 18/7/36 on **Prunus spinosa**; Littlebeck, 13/9/36 (H.B.); uncommon on **Asperula odorata**, Fyling Hall, 29/6/29 (G.B.W.).

persicae (Sulz.)—On **Petasites**, Forge Valley, apterae and larvae, 6/8/28; on **Petunia**, Scarborough, 1/9/28 (G.B.W.).

lythri (Schr.)—In the flower heads of **Lythrum salicaria**, apterae only, Forge Valley, 12/9/28 (G.B.W.).

AULACORTHUM Mordvilko

solani (Kalt.)—Littlebeck, 13/9/36 (H.B.); Raincliffe Wood, fairly common (G.B.W.).

LIPORRHINUS Boerner, C.

chelidonii (Kalt.)—Common on **Calceolaria** in the garden, Scarborough, 1/9/28 (G.B.W.).

IDIOPTERUS Davis

nephrolepidis Dav.—Abundant on cultivated **Pteris** indoors, apterae and larvae, 20/8/28; common on greenhouse ferns, Hackness, 1928 (G.B.W.).

CAVARIELLA Del Guercio

pastinacae (L.)—Very common on fruits of **Heracleum** and on shoots of **Salix caprea** and **S. pentandra**, Scarborough district (G.B.W.).

HYALOPTERUS Koch, C. L.

arundinis (Fabr.)—Abundant on **Prunus spinosa**, often causing serious injury to foliage.

BREVICORYNE van der Goot

brassicae (L.)—Common on cultivated cabbages.

HYADAPHIS Kirkaldy

sii (Koch, C. L.)—On honeysuckle, larvae, nymphs and alatae, 11/9/28, Scarborough Mere; on leaves, 29/6/29, Fyling Hall (G.B.W.).

APHIS Linnaeus

sambuci L.—Alatae and young larvae on elder, Scarborough, 19/8/28 (G.B.W.).

rumicis (L.)—Very common.

fabae (Scop.)—Littlebeck, 13/9/36 (H.B.); at times common in winter, eggs on twigs of **Euonymus europaeus**, Forge Valley (G.B.W.).

hederae (Kalt.)—On ivy, Fyling Hall, 29/6/29 (G.B.W.).

epilobii (Kalt.)—Littlebeck, 13/9/36 (H.B.) ; Raincliffe Wood, apterae, 8/9/28 (G.B.W.).

viburni (Scop.)—Abundant at times on **Viburnum**, causing extensive damage; Scarborough district, well distributed (G.B.W.) ; Littlebeck, 13/9/36 (H.B.).

rhamni (Fonsc.)—On potatoes (G.B.W.).

pomi (De G.)—On hawthorn, Scarborough (G.B.W.).

githaginea (Theob.)—Several apterae apparently referable to this species were taken on corn-cockle (**Lychnis githago**), 26/7/26, det. F.V.T. (G.B.W.).

grossulariae (Kalt.)—Common on gooseberries in the Scarborough district (G.B.W.).

SAPPAPHIS Matsumura

pyri (Fonsc.)—Beckhole, 18/7/36, Littlebeck, 13/9/36 (H.B.).

YEZABURA Matsumura

sorbi (Kalt.)—Littlebeck, 13/9/36 (H.B.) ; on mountain ash, Staintondale (W.F., Nat., 1919, p. 393).

tulipae (Fonsc.)—On tulip in the house, Scarborough, 3/28 ; on carrots in the garden, 1928, Scarborough (G.B.W.).

crataegi (Kalt.)—Fairly common on hawthorn, producing reddish blisters on the leaves (G.B.W.).

malifoliae (Fitch)—Causing leaf curl on crab-apple, Sawdon Dale, larvae, nymphs and alatae, 26/7/28 (G.B.W.).

BRACHYCAUDUS van der Goot

cardui (L.)—On **Senecio jacobaea** and **Carduus** sp., alatae and larvae, 21/7/28, Sawdon Dale ; common on **Carduus**, 23/8/28, Langdale End (G.B.W.).

helichrysi (Kalt.)—General and abundant in the Scarborough area (W.F., Nat., 1919, p. 393 ; G.B.W.).

lychnidis (L.)—On **Lychnis dioica**, 8/24, Raincliffe Wood ; on **L. alba**, 4/29, Hunmanby (G.B.W.).

BRACHYCOLUS Buckton

stellariae (Hardy).—On **Stellaria graminea**, 18/7/36 (H.B.) ; on **Holcus mollis** and **Cirsium vulgatum**, between Ravenscar and Robin Hood's Bay ; on **Stellaria holostea**, Lady Edith's Drive (W.F., Nat., 1922, p. 23).

HOLCAPHIS Lambers

holci (Hardy)—It is probable that the specimens from **Holcus** recorded above really refer to this species.

MYZOCALLIS Passerini

S. MYZOCALLIS s.s.

coryli (Goeze)—An alate female, 23/8/28, Langdale End ; on wych elm, **Ulmus glabra**, Falling Foss, 14/7/28, det. F.V.T. (G.B.W.).

alni (De G.)—Apterae on alder, 20/7/28, Hayburn Wyke (G.B.W.).

castanicola Baker—Alatae on sweet chestnut, **Castanea sativa**, Mill, 26/7/28 ; Sawdon Dale (G.B.W.).

annulatus (Hart.)—On oak, 14/7/28, Falling Foss (G.B.W.).

querceus Kalt.—A single alate female on oak, 23/8/28, Langdale End (G.B.W.).

S. THERIOAPHIS Walker

tiliae (L.)—Common on lime, *Tilia vulgaris* in Scarborough (G.B.W.).

betulicola (Kalt.)—On birch, 24/5/28, Raincliffe Wood (G.B.W.).

EUCERAPHIS Walker

betulae (L.)—Common on birch (G.B.W.).

DREPANOSIPHUM Koch, C. L.

platanoides (Schr.)—Common on sycamore all over the district.

PHYLLAPHIS Koch, C. L.

fagi (L.)—Common on beech, especially in hedges when it often causes leaf-curl.

ATHEROIDES Haliday

serrulatus Hal.—On grasses near Scarborough Mere, 11/9/28 (G.B.W.).

PERIPHYLLUS v. d. Hoeven

testudinatus (Thornt.)—Sycamore, Pickering, 18/5/46 (J.H.F.).

VACUNA von Heyden, C. H. G.

dryophila (Schr.)—Filey (F.V.T., Brit. Aph., III, p. 73).

CINARA Curtis

pini (L.)—On Scots pine, *Pinus sylvestris* Staintondale, 20/6/29 (G.B.W.).

NEOCHMOSIS Laing

pinihabitans (Mordv.)—Scots pine, Silpho Moor, 6/8/28 (G.B.W.).

vanduzeei (Swain)—On spruce, Forge Valley, 28/7/29 (G.B.W.).

THECABIUS Koch, C. L.

affinis (Kalt.)—Littlebeck, 13/9/36 (H.B.); on poplars south of Holbeck Gardens (W.F.); Scarborough (G.B.W.).

BYRSOCRYPTA Haliday

bursaria (L.)—Littlebeck, 13/9/36 (H.B.); somewhat occasional at Scarborough; the form *lactucaria* occurs in numbers at times on the roots of lettuce (G.B.W.).

spirothecae (Pass.)—On black poplar on the cliffs south of Holbeck Gardens, Scarborough (W.F., Nat., 1919, p. 393).

flaginis (Fonsc.)—Littlebeck, 13/9/36 (H.B.).

ERIOSOMA Leach

lanigerum (Hausm.)—Fairly common on apple trees in Scarborough and elsewhere (G.B.W.).

ulmosedens March.—Causing galls on elms in the Valley, Scarborough, 21/7/28; Sawdon Dale, 26/7/28 (G.B.W.).

TETRANEURA Hartig

ulmifoliae Bak.—Littlebeck, 13/9/36 (H.B.).

GOBAISHIA Matsumura

pallida Hal.—Littlebeck, 13/9/36 (H.B.).

PHYLLOXERIDAE

ADELGES Vallot

abietis (L.)—Abundant all over the district, frequently causing great damage to spruce.

ALEYRODIDAE - WHITE-FLIES

ALEYRODES Latreille

proletella (L.)—Occasionally damaging cabbages, Scarborough.

loniceræ Walk.—Larvae on **Lonicera**, Raincliffe Wood, Hayburn Wyke and Staintondale; flies in great abundance, Forge Valley, 6/11/1920.

PEALIUS Quaintance & Baker

quercus (Sign.)—Fairly frequent on **Corylus**, Raincliffe Wood, Hackness, Staintondale and Langdale End.

TETRALICIA Harrison, J. W. H.

ericæ Harr., J.W.H.—Once, in abundance on **Erica tetralix**, near the Falcon Inn, 8/1920; Broxa, 8/1947.

TRIALEURODES Cockerell

vaporariorum (Westw.)—A common pest in greenhouses.

COCCIDAE — SCALE INSECTS

Aspidiotus hederæ (Vall.)—Commonly on a palm indoors at Scarborough.

Chrysomphalus aurantii (Mask.)—Occasional on imported lemons.

Parlatoria pergandii Comst.—At one time very common on imported oranges; only occasional nowadays.

Chionaspis salicis (L.)—Very common and widely distributed.

Lepidosaphes ulmi (L.)—MUSSEL SCALE. Not a very common species.

Eriopeltis festucae (Fonsc.)—Occasional on grasses.

Luzulaspis luzulae (Duf., L.)—Fairly common on **Luzula** in Raincliffe Wood.

Eulecanium bituberculatum (Targ.-Tozz.)—On hawthorn, Scarborough.

E. corni (Bouché)—Common.

E. coryli (L.)—Common.

Physokermes abietis (Geoffr.)—Not uncommon on spruce.

Pseudococcus adonidum (L.)—MEALY-BUG. Occasional in greenhouses.

Fonscolombia fraxini (Kalt.)—On old ashes, Stepney, Scarborough.

Cryptococcus fagi (Baer.)—FELTED BEECH COCCUS. Very common on beeches all over the district.

Orthezia cataphracta (Shaw)—Common on the moors among damp sphagnum.

Polytrichum.

Newsteadia floccosa (De G.)—Fairly common on the moors among

Order MEGALOPTERA — ALDER FLIES

SIALIDAE

SIALIS Latreille

lutaria (L.)—Common near most of the streams in the dales.

Order NEUROPTERA — LACEWINGS

The following initials are used :—

H.B.—H. Britten fil.

J.M.B.—J. M. Brown

W.J.F.—W. J. Fordham

G.T.P.—G. T. Porritt

W.D.H.—W. D. Hincks

G.B.W.—G. B. Walsh

CONIOPTERYGIDAE

CONWENTZIA Enderlein

psociformis (Curt.)—On holly, Raincliffe Wood, 3/8/25 (G.B.W.) ; Robin Hood's Bay, Ramsdale (J.M.B.).

CONIOPTERYX Curtis

tineiformis Curt.—Plentiful on hawthorn, Robin Hood's Bay district (J.M.B.).

pygmaea End.—Raincliffe Wood, Flixton sand pits, June, 1943 (W.D.H.).

SEMIDALIS Enderlein

aleyrodiformis (Steph.)—Plentiful on hawthorn, Hawsker, Robin Hood's Bay (J.M.B.) ; Raincliffe Wood (G.B.W.).

OSMYLIDAE

OSMYLUS Latreille

fulvicephalus (Scop.)—Occurs every year in small numbers in Forge Valley (G.B.W.).

HEMEROBIIDAE

EUMICROMUS Nakahara

paganus (L.)—Beaten from a field hedge, Robin Hood's Bay, 30/6/44 (J.M.B.) ; Ramsdale (J.M.B.) ; Fylingdale (W.J.F.).

HEMEROBIUS Linnaeus

humulinus L.—Common.

simulans Walk.—Brockets, Fylingdale, -/6/39 (J.M.B.) ; Goathland (H.B.).

stigma Steph.—Common.

nitidulus Fabr.—Ramsdale, 1/7/44 (J.M.B.).



LACEWING (*Chrysopa flava* (Scop.))

Photograph : Vincent J. Watson, F.R.P.S.

micans Oliv.—Frequent, June to September.

lutescens Fabr.—Common.

marginatus Steph.—Beaten from alders, Howdale, Fylinghall (J.M.B.) ; Goathland (H.B.) ; Raincliffe Wood (G.B.W.).

KIMMINSIA Killington

betulina (Stroem, H.)—Widely distributed.

subnebulosa Steph.—Fairly common.

WESMAELIUS Krueger

concinus (Steph.)—Forge Valley (G.B.W.) ; Robin Hood's Bay (J.M.B.).

quadrifasciatus (Reut., O. M.)—Robin Hood's Bay (J.M.B.).

SYMPHEROBIUS Banks

elegans (Steph.)—Howdale on alder, 7/8/42 (J.M.B.).

CHRYSOPIDAE

CHRYSOPA Leach

flava (Scop.)—Common.

vittata Wesm.—Common.

ciliata Wesm.—Common.

albolineata Kill.—Robin Hood's Bay (J.M.B.) ; Scarborough Mere (W.D.H.) ; Raincliffe Wood (G.B.W.).

carnea Steph.—Common.

ventralis Curt.—Robin Hood's Bay, Ramsdale (J.M.B.).

s. *prasina* Burm.—Robin Hood's Bay (J.M.B.).

NATHANICA Navas

capitata (Fabr.)—Fylinghall (W.J.F.) ; Ravenscar, Ramsdale (J.M.B.).

Order MECOPTERA — SCORPION FLIES

PANORPIDAE

PANORPA Linnaeus

communis L.—Common.

germanica L.—Not so common as the last.

cognata Rambur—Rare, Forge Valley (G.B.W.).

BOREIDAE

BOREUS Latreille

hyemalis (L.)—Probably commoner than is recorded. Hay Brow, fairly common; a specimen walking on the snow on Oliver's Mount (G.B.W.).

Order TRICHOPTERA — CADDISFLIES

H. Whitehead

The Caddisflies have received a good deal of attention from Yorkshire entomologists and with the exception of one family (Hydroptilidae), records have been kept for over forty years. Members of the Hydroptilidae are very small with a wing expanse of a little over a quarter of an inch. No doubt several species will be added to the present meagre list.

In this area the larval stages, "Caddis Worms," are found mostly in running water.

The names of recorders are :—

H.B.—H. Britten, fil.

R.M.—R. M. R. McLachlan

J.M.B.—J. M. Brown

G.T.P.—G. T. Porritt

P.H.G.—P. H. Grimshaw

G.B.W.—G. B. Walsh

W.D.H.—W. D. Hincks

H.W.—H. Whitehead

PHRYGANEIDAE

PHRYGANEA Linnaeus

obsoleta Hag.—Fylingdales Moor, 13/7/35, (H.B.) ; Robin Hood's Bay, 12/7/46, (J.M.B.).

LIMNEPHILIDAE

COLPOTAULIUS Kolenati

incisus (Curt.)—Raincliffe Wood and Forge Valley, (W.D.H.).

GRAMMOTAULIUS Kolenati

strigosus (Curt.)—Pickering, 6/6/42, (H.W.).

GLYPHOTAELIUS Stephens

pellucidus (Retz.)—Robin Hood's Bay, 1/6/37, Oxbank Wood, 1/7/37, (J.M.B.).

LIMNOPHILUS Leach

rhombicus (L.)—Fen Bog, Goathland, 11/7/37, (H.B.).

stigma (Curt.)—Seamer Moor, 18/6/41, (H.W.).

lunatus Curt.—Robin Hood's Bay, 1943, (J.M.B.).

centralis Curt.—Ravenscar, 26/6/37, Brockets, 29/6/37, Maw Wyke, 25/6/37, Fylinghall, 26/6/36, (J.M.B.) ; Fen Bog, Goathland, 11/7/37, Hole of Horcum, 27/6/37, Wragby Wood, 6/6/36, Helwath Beck, 26/9/37, (H.B.) ; Pickering, 6/6/42, Forge Valley, 12/6/43, (H.W.).

vittatus (Fabr.)—Robin Hood's Bay, 1/4/45, (J.M.B.).

affinis Curt.—Robin Hood's Bay, 26/8/45, Maw Wyke, 16/9/36, (J.M.B.).

auricula Curt.—Ravenscar, 26/6/37, Ramsdale, 25/6/37, Oxbank Wood, 2/7/37, Brockets, 19/6/37, (J.M.B.) ; Helwath Beck, 26/9/37, (H.B.).

griseus (L.)—Ramsdale Beck, 4/6/42, (J.M.B.).

luridus Curt.—Hole of Horcum, 27/6/37, (H.B.) ; Ramsdale, 8/7/37, (J.M.B.).

sparsus Curt.—Fylinghall, 26/6/36, Linger's Fields, 23/6/37, Ramsdale, 14/6/37, Oxbank Wood, 1/7/37, Howdale, 12/6/37, (J.M.B.) ; Beckhole, 1/6/36, Goathland, 30/9/37, (H.B.).

ANABOLIA Stephens

nervosa (Curt.)—Pickering and Scarborough, (G.T.P.) ; Beckhole, 7/9/36, Robin Hood's Bay, 25/9/45, Ramsdale, 24/9/36, (J.M.B.).

PHACOPTERYX Kolenati

brevipennis (Curt.)—Scarborough, (R.M.).

STENOPHYLAX Kolenati

rotundipennis (Brauer)—Scarborough, (R.M.).

stellatus (Curt.)—Pickering, (G.T.P.).

latipennis (Curt.)—Linger's Fields, 4/9/42, Brockets, 28/9/37, (J.M.B.).

vibex (Curt.)—Scarborough, (G.T.P.) ; Beckhole, 1/6/36, (H.B.).

permistus McL.—Hayburn Wyke, (G.T.P.) ; Helwath Beck, 26/9/37, Goathland, 30/9/37, (H.B.) ; Robin Hood's Bay, 1943, (J.M.B.) ; Troutsdale, 9/5/47, (H.W.).

MICROPTERNA Stein

sequax McL.—Ravenscar, 9/10/37, (J.M.B.).

HALESUS Stephens

radiatus (Curt.)—Pickering, 18/9/41, (H.W.) ; Robin Hood's Bay, 1943, (J.M.B.).

digitatus (Schränk)—Robin Hood's Bay, 1943, (J.M.B.).

guttatipennis McL.—Forge Valley, (G.B.W.) ; Pickering, 28/10/96 (G.T.P.).

DRUSUS Stephens

annulatus (Steph.)—Hayburn Wyke, (G.T.P.) ; Robin Hood's Bay, 7/9/36, Ramsdale, 29/9/37, Fylinghall, 8/9/36, Oxbank Wood, 14/9/36, Maw Wyke, 16/9/36, Brockets, (J.M.B.) ; Hole of Horcum, 31/8/37, (H.B.).

ECCLISOPTERYX Kolenati

guttulata (Pict., F. J.)—Wykeham, Scarborough, (G.T.P.).

CHAETOPTERYX Stephens

villosa (Fabr.)—Pickering, 28/10/36, (G.T.P.) ; Goathland, 24/9/48, (H.W.).

SERICOSTOMATIDAE

SERICOSTOMA Berthold

personatum (Spence)—Fylinghall, 26/6/36, Robin Hood's Bay, 23/6/36, (J.M.B.) ; Fen Bog, Goathland, 11/7/37, (H.B.) ; Forge Valley, (G.B.W.).

SILO Curtis

pallipes (Fabr.)—Ramsdale, 14/6/37, Brockets, 15/8/37, Maw Wyke, 25/6/37, Oxbank Wood, 1/7/37, Robin Hood's Bay, 14/6/37, (J.M.B.) ; Hole of Horcum, 26/7/37, (H.B.) ; Forge Valley, (G.B.W.).

CRUNOECIA McLachlan

irrorata (Curt.)—Robin Hood's Bay, 10/9/36, Fylinghall, 10/9/36, Ramsdale, 14/6/37, Throxenby Mere, 12/6/43, (J.M.B.) ; Hayburn Wyke, (G.B.W.).

LEPIDOSTOMA Rambur

hirtum (Fabr.)—Pickering, 2/8/41, (H.W.).

LASIOCEPHALA Costa, A.

basalis (Kol.)—Throxenby Mere and Forge Valley, 12/6/43, (J.M.B.).

BERAEIDAE**BERAEA** Stephens

pullata (Curt.)—Maw Wyke, 30/6/42, (J.M.B.) ; Forge Valley, 12/6/43, (H.W.).

maurus (Curt.)—Hayburn Wyke, (G.T.P.) ; Hole of Horcum, 31/8/37, (H.B.) ; Robin Hood's Bay, 8/7/37, Maw Wyke, 25/6/37, Ramsdale, 8/7/37, Fylinghall, 12/7/40, (J.M.B.) ; Goathland, 6/7/46, (H.W.).

ODONTOCERIDAE**ODONTOCERUM** Leach

albicorne (Scop.)—Hole of Horcum, 26/7/37, (H.B.) ; Robin Hood's Bay, 30/6/45, Brockets, 21/7/42, (J.M.B.) ; Pickering, 2/8/41, Goathland, 6/7/46, (H.W.) ; Forge Valley, (G.B.W.).

LEPTOCERIDAE**ATHRIPSOIDES** Billberg (= **LEPTOCERUS** Leach)

aterrimus (Steph.)—Throxenby Mere, 12/6/43, (J.M.B.).

cinereus (Curt.)—Scarborough, (G.T.P.).

albifrons (L.)—Scarborough, 1893, (G.T.P.).

bilineatus (L.)—Goathland, 6/7/46, (H.W.).

commutatus (McL.)—Scarborough, (R.M.).

MYSTACIDES Berthold

nigra (L.)—Scalby Beck, (G.T.P.) ; Fen Bog, Goathland, 11/7/37, (H.B.).

azurea (L.)—Pickering, 2/8/41, (H.W.).

ADICELLA McLachlan

reducta (McL.)—Robin Hood's Bay, 2/7/37, (J.M.B.).

HYDROPSYCHIDAE**HYDROPSYCHE** Pictet, F. J.

pellucidula (Curt.)—Helwath Beck, 6/6/37, (H.B.).

instabilis (Curt.)—Hole of Horcum, 27/6/37, (H.B.) ; Brockets, 24/6/42, (J.M.B.).

DIPLECTRONA Westwood

felix McL.—Scarborough, (R.M.) ; Ramsdale Beck, 1933, (J.M.B.).

POLYCENTROPIDAE**PLECTROCNEIA** Stephens

conspersa (Curt.)—Robin Hood's Bay, 4/7/39, in house, (J.M.B.).

geniculata McL.—Ramsdale, 14/6/37, (J.M.B.).

POLYCENTROPUS Curtis

flavomaculatus (Pict., F. J.)—Scarborough, (G.T.P.); Goathland, 6/7/46, (H.W.).

CYRNUUS Stephens

trimaculatus (Curt.)—Goathland, 6/7/46, (H.W.).

PSYCHOMYIDAE**TINODES** Leach

waeneri (L.)—Scalby Beck, (G.T.P.); Goathland, 6/7/46, (H.W.).
aureola (Zett.)—Hayburn Wyke, (G.T.P.); Ravenscar, 5/7/37, (J.M.B.).

dives (Pict.)—Hole of Horcum, 26/7/37, (H.B.); Maw Wyke, 5/7/38, (J.M.B.).

PHILOPOTAMIDAE**PHILOPOTAMUS** Leach

montanus (Don.)—Oxbank Wood, 12/6/40, (J.M.B.).

WORMALDIA McLachlan

occipitalis (Pict., F. J.)—Hayburn Wyke, (G.T.P.); Hole of Horcum, 31/8/37, Sleights, 29/9/37, (H.B.); Robin Hood's Bay, 16/9/36, Ravenscar, 9/10/37, (J.M.B.).

subnigra McL.—Scarborough, (G.T.P.).

RHYACOPHILIDAE**RHYACOPHILA** Pictet, F. J.

dorsalis (Curt.)—Scalby Beck, (G.T.P.); Beckhole, 17/9/36, Brockets, 28/9/37, Ramsdale, 24/9/36, (J.M.B.); Pickering, 18/9/41, (H.W.).

obliterata McL.—Scarborough, (G.T.P.); Goathland, 30/9/37, Sleights, (H.B.); Beckhole, 17/9/36, Robin Hood's Bay, 14/9/36, Brockets, 7/10/37, Maw Wyke, 16/9/36, Fylinghall, 8/9/36, Ramsdale, 10/9/36, Oxbank Wood, 14/9/36, (J.M.B.); Hayburn Wyke, (G.B.W.).

munda McL.—Helwath Beck, 26/9/37, (H.B.).

GLOSSOSOMA Curtis

boltoni Curt.—Ravenscar, 26/6/37, Robin Hood's Bay, 20/6/45, Brockets, 25/6/40, (J.M.B.).

AGAPETUS Curtis

fuscipes Curt.—Hole of Horcum, 27/6/37, (H.B.); Robin Hood's Bay, 25/6/37, Ravenscar, 26/6/37, Maw Wyke, 25/6/37, Oxbank Wood, 1/7/37, Ramsdale, 8/7/37, (J.M.B.).

comatus (Pict., F. J.)—Pickering, 2/8/41, (H.W.).

HYDROPTILIDAE**ALLOTRICHIA** McLachlan

pallicornis (Eat.)—Pickering, 2/8/41, (H.W.).

HYDROPTILA Dalman

mclachlani Klap.—Robin Hood's Bay, 5/10/37, (J.M.B.).

Order LEPIDOPTERA MOTHS and BUTTERFLIES

G. B. Walsh

A firm foundation for our knowledge of our local Lepidoptera was laid nearly a century ago by Thomas Wilkinson. He was one of our foremost British students of the Microlepidoptera, breeding and collecting for the first time a number of species which were described by H. T. Stainton. At the beginning of this century A. S. Tetley and T. W. Lownsbrough collected the larger species, Tetley specialising to some extent on the Noctuidids. Of recent years Mr. Arthur Smith of York has done much collecting in the district, both near Scarborough and at Pickering, and the late Mr. W. Craigs of Cat Cleugh, Northumberland, has collected near Staintondale; good work has also been done by young members of the Scarborough Field Naturalists' Society, notably by the late Mr. G. L. McDermid, and Messrs. M. Ellison and E. Owston, who are keen students of the larger species. All modern workers have, of course, been much indebted in many ways to the late Mr. H. W. Head, the veteran breeder of Lepidoptera, to whose kindly soul and generous nature we pay tribute here.

In using the following notes the student should recognise that Wilkinson records as from "Scarborough" many species which may have been taken some distance from the town; e.g. *Celaena haworthi* Curt. was probably taken near the Falcon Inn. Moreover, some of his "species" are now known to be two species; e.g. *Coleophora laripennella* Zett. and *C. annulatella* Tengstr.; *Tinaea cloacella* Haw. and *T. ruricolella* Staint. In the absence of the actual specimens each species has been left under the name in which it was originally recorded.

By far the greatest amount of work has been done on the open moors and in the woods and valleys near Scarborough and Pickering. Owing probably to their less picturesque character and to some degree of inaccessibility, very little collecting has been done in the Carrs of the Vale of Pickering or on the Wolds.

On the open moorland there has probably been little change for many centuries. Here over very large areas there are more or less uniform environmental factors such as soil, humidity, drainage, aspect, insolation, etc., thus we get a more or less uniform plant covering, with *Calluna* as a dominant, and *Erica*, *Vaccinium* and moorland grasses (*Nardus*, *Molinia*, *Deschampsia*) as sub-dominants, with *Pteridium* dominant on the slopes. Observation seems to show that this uniformity of covering is associated with a fairly uniform distribution of the insects feeding on these plants, with, of course, seasons of greater or less abundance of individual species. Examples of such insects are the Green Hairstreak Butterfly (*Callophrys rubi* (L.)), and among the moths the Emperor (*Saturnia pavonia* (L.)), Oak Eggar (*Macrothylacia*

rubī (L.)), Beautiful Yellow Underwing (*Anarta myrtilli* (L.)), Ling Pug (*Eupithecia goosensiata* Mab.), etc. The Scarce Silver Underwing (*Plusia interrogationis* (L.)), a species of northern distribution, is less common, but is still widely distributed as it nears the southern border of its range.

In the wooded areas it is probable that there has been little change in the general composition of the vegetation during the past centuries. Woods have been cut down and replanted and new plantings have taken place (Raincliffe Wood was replanted about 1860), especially the extensive plantings of conifers, many of them of foreign origin, now taking place under the Forestry Commission ; but on the whole there has been a more or less definite continuum of typical English woodland vegetation since the days of the Forest of Pickering.

These wooded or cultivated areas offer a much greater variety of micro-climates than do the wide expanses of the moors, and consequently insects tends to be more or less localised, and may also vary a good deal in abundance from year to year. Observations since the days of Wilkinson show that the insect population is by no means static in either number or constitution, but is always in a state of ebb and flow. The butterflies, on which, owing to their day-flying habits, observations are most easily made, exhibit this phenomenon in an interesting way. Just as in other parts of the country, there was, about fifty years ago, a marked diminution in the numbers of certain species until at last they completely disappeared ; some examples are the Comma (*Polygonia c-album* (L.)), the Wall (*Dira megera* (L.)), the Grayling (*Eumenis semela* (L.)). A possible suggestion is that sunless wet years, especially 1863, so reduced the numbers of these species that they fell below the minimum necessary to preserve the vitality of the race and so they gradually disappeared owing to this form of natural inbreeding. Now, however, these butterflies are gradually coming back again to the haunts where they occurred before, not only in our own district but all over the country. This rejuvenescence of vitality may possibly be due, in some cases at least, to a gradual amelioration of climatic conditions accompanied by the immigration into the south of England of new " blood " from the Continent, with their subsequent natural spread into the haunts where they occurred before. In the special case of the Wall Butterfly the species is subject, for some unexplained reason, to these oscillations of abundance and scarcity over a number of years.

Variations in the numbers of moths are not so easy to observe, but there is no doubt that they occur, although an apparent loss of a species may be due to some error in collecting. A number of species which were taken in Wilkinson's time, some of them recorded as " common ", have not been seen for many years ; e.g., Red-Necked Footman (*Atolmis rubricollis* (L.)), Coronet (*Craniophora ligustri* (Fabr.)), Small Dotted Buff (*Petilampa minima* (Haw.)), Slender Brindle (*Xylophasia scolopacina* (Esp.)), The Confused (*X. furva* (Hueb.)), Union Rustic (*Apamea pabulatricula* (Brahn)), common in Wilkinson's time but now

scarce, The Flame (*Axylia putris* (L.)), said to be "very common" in Stainton's Manual, but not recorded for a very long time.

There are many others which have not been taken for many years; most will doubtless be found again, but some, such as the Goat Moth (*Cossus cossus* L.), definitely have disappeared from our present fauna.

On the other hand a good many species have been recorded this century which were never taken by Wilkinson, and in fact, in at least one case, the Golden Plusia (*Polychrisia moneta* (Fabr.)) was not even a British species in his day. This was first recorded from the south of England in 1890 and was recorded from our area in 1919; since then it has become quite common in local gardens where the larva feeds on monkshood and larkspur. The case of the Large Elephant Hawk Moth (*Deilephila elpenor* (L.)) is very interesting; recorded as common by Wilkinson, it was rare in Tetley's time; since then, however, it has become one of the commonest of our Hawk Moths, the larva feeding in gardens on fuchsia and in the wild on Rosebay Willowherb and species of *Epilobium*. It is noteworthy that the increase in the numbers of the moth has synchronised with the wide extension of range of this food-plant. Some other moths which have been taken more or less commonly in the district since Wilkinson's time are Dark Swordgrass (*Agrotis ypsilon* (Rott.)), abundant at sugar, 1911 (A.S.T.), Orange Sallow (*Tiliacea citrigo* (L.)), Dusky-lemon Sallow (*Cirrhia gilvago* (Schiff.)), Powdered Quaker (*Taeniocana gracilis* Fabr.), Scallop Shell (*Calocalpe undulata* (L.)), Lilac Beauty (*Hygrochroa syringaria* (L.)), Spinach (*Lygris associata* (Borkh.)).

In very few cases can we give any reason for the gain or loss of a species in our local lists. In most cases their loss is definitely not due to over-collecting nor is it connected in any way with the damage they do to their food plant, for only in very few cases (and these chiefly the spring-feeding larvae of the Winter Moths and their allies) do the species cause any material damage to vegetation; in fact, in most cases the food plants can apparently support with ease far more than the number of larvae normally found upon them. We can only hypothesise that it is connected in some complex way with climate, acting either favourably or unfavourably over more or less extended periods on the insect itself, on other species with which it is in competition or upon their parasites or predators.

Several types of melanism or melanochroism occur in our area. Strictly speaking, the case of *Phycis fusca* Haw. is not an example of this phenomenon, but it is of great interest. It inhabits the swiddens—the patches on the moors where the heather has been burnt off—and harmonises well with the environment. Perhaps the larvae of the Magpie Moth (*Abraxas grossulariata* (L.)) give a better example. Among the caterpillars feeding on *Euonymus japonica* in the town, many are almost or quite black, and resemble well the somewhat sooty twigs on which they occur; but the moths bred from them are no blacker than the normal and exhibit the usual variations in colour incidental to the species.

Some of our moths exhibit the darkening in tint which we associate with moths living at high altitudes or in high latitudes. Examples of such forms are frequently found in the Dark Arches (*Xylophasia monoglypha* (Hufn.) var. *infuscata* White), Marbled Minor (*Procus strigilis* (Clerck)), Grey Arches (*Polia nebulosa* (Hufn.)), and many other species have forms more or less deeper tinted than south-country specimens. This may possibly be due to the direct effect of cold upon an early stage of the insect, and experiment has shown that melanochroic forms can actually be produced in this way. Another suggestion is that the deeper pigmentation is due to the more nourishing character of the vegetation in the North, this being due in its turn to lower temperatures which stunt growth and longer insolation in the summer which assists photosynthesis.

The black variety (var. *doubledayaria* Mill.) of the Peppered Moth (*Biston betularia* (L.)) is now commoner in the district than the type though both forms occur commonly and may be found in copula with one another or be bred from the same batch of eggs. This form was not recorded by either Wilkinson or Tetley, and presumably was unknown to them. Its spread may be due, as South suggests (British Moths, II, 301), to the liberal distribution of eggs of the variety, or, more probably, to the natural spread of this vigorous form, parallel with the spread of some of the butterflies (v.s.).

Finally, and perhaps the most interesting, are a few cases of the melanism which is usually associated with industrial areas. Some of the examples occurring with us are Pale Brindled Beauty (*Phigalia pedaria* (Fabr.)), Scalloped Hazel (*Gonodontis bidentata* (Clerck)), Small Early Grey (*Diurnea fagella* (Fabr.)), Marbled Minor (*Procus strigilis* (Clerck)), Grey Arches (*Polia nebulosa* (Hufn.)), and perhaps we may associate with them the variety *plumbea* of *Abraxas sylvata*, the Clouded Magpie, which used to be taken in numbers at Sledmere. Most of these forms are locally of late origin for they were not mentioned by Tetley (d. 1916), and yet they occur in Raincliffe Wood which is 2—3 miles from the centre of the town and which Tetley worked assiduously, and probably elsewhere.

The occurrence of these melanic forms is usually associated with soot, and may be due to selective destruction of paler forms by birds or possibly to the direct action on the insect in the larval stage of a food-plant contaminated with mineral salts. We may associate with this so-called "industrial melanism" of these species of moths the fact, mentioned by Dr. W. Watson in his Introduction to the Lichens, that certain species of local lichens show definitely the effects of soot. Probably a certain amount of this comes from the town, but much probably comes from other sources, perhaps from Tees-side and certainly from west and south Yorkshire. This is best seen in trees growing in the open and sufficiently far from the town as not to be masked by local soot. If the branches on the S.W. or W. side of such a tree be stroked with one hand and those on the opposite side be stroked with the other, the former becomes much blacker than the second; or if an exposed

larch be observed in the autumn when the needles are yellow, those on the S.W. and W. sides are obviously darker than those on the opposite side. This suggests that, though the air seems quite clean, there is actually a small amount of wind-blown soot from the industrial areas of the West Riding.

Nearer Scarborough the smoke of the town has a limited effect on the foliage. For most of the year land breezes carry the smoke out to sea, but there is a spell in April and early May when sea-breezes blow it inland, and this, of course, would affect the young foliage of the year. The amount of soot deposition cannot be very great for the tree-trunks are not much blackened and the dark moths stand out upon them more clearly than do the typical forms. For further information on the subject see "Moths", E. B. Ford, 1955, Chap. 13.

The list has been compiled from the record-books of the Scarborough Field Naturalists' Society and from G. T. Porritt's "List of Yorkshire Lepidoptera", 1904.

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T.W.L.—T. W. Lownsbrough	G.B.W.—G. B. Walsh
G.L.M.—G. L. McDearmid	T.W.—T. Wilkinson

MICROPTERIGIDAE

ERIOCRANIA Zeller

semipurpurella (Steph.)—Common near Scarborough.

rubroaurella (Haw.)—Common.

salopiella (Staint.)—Scarborough on birch (T.W.).

sparrmannella (Bosc)—With the last (T.W., A.S.).

MNEMONICA Meyrick

unimaculella (Zett.)—Scarborough (T.W., A.S.).

subpurpurella (Haw.)—Scarborough (T.W., A.S.).

MICROPTERIX Huebner

thunbergella (Fabr.)—Very common, Scarborough (S.M.).

aureatella (Scop.)—Scarborough (T.W.) ; Raincliffe Wood (G.B.W.), about spike heads of *Carex sylvatica*.

aruncella (Scop.)—Common, Scarborough (S.M.) ; Flamborough Head (E.H.).

calthella (L.)—Scarborough (T.W., A.S.) ; abundant in Forge Valley about flowers of *Caltha palustris* (G.B.W.).

HEPIALIDAE

HEPIALUS Fabricius

hectus (L.)—GOLD SWIFT. Abundant in woods, even within Scarborough.

lupulinus (L.)—COMMON SWIFT. Common everywhere.

fuscenebulosus (De G.)—MAP-WINGED SWIFT. Very common on the moors and in woods and dales where bracken occurs. Many beautiful forms may be taken.

sylvinus (L.)—ORANGE SWIFT. Common almost everywhere.

humuli (L.)—GHOST SWIFT. Common.

ARCTIIDAE

EILEMA Huebner

complana (L.)—SCARCE FOOTMAN. Scarborough (T.W.) ; Pickering (A.S.).

griseola (Huebn.)—DINGY FOOTMAN. Common in Raincliffe Wood (T.W.).

LITHOSIA Fabricius

quadra (L.)—FOUR-SPOTTED FOOTMAN. Visits flowers of hogweed on Oliver's Mount, Scarborough in July (T.W.).

ATOLMIS Huebner

rubricollis (L.)—RED-NECKED FOOTMAN. Common (T.W.), but there have been no records for many years.

COMACLA Walker

senex (Huebn.)—ROUND-WINGED MUSLIN. Scarborough (T.W.).

MILTOCHRISTA Huebner

miniata (Forst.)—ROSY FOOTMAN. Scarborough (S.M.) ; this record needs confirmation.

NUDARIA Haworth

mundana (L.)—MUSLIN FOOTMAN. Generally common near Scarborough ; common at light at Everley (A.S.T.) ; larvae feeding on moss in wall at Ayton Castle (A.S.), and Stepney Hill (G.B.W.).

HYPOCRITA Huebner

jacobaeae (L.)—CINNABAR. Common in many places ; at times the larvae are so abundant as to destroy the whole of the food-plant and then they turn to groundsel.

UTETHEISA Huebner

pulchella (L.)—CRIMSON SPECKLED. One on Raincliffe (Seamer) Moor by R. Beck, 2/9/1871 (J.H.R.) ; one at Scarborough, -/6/1876 (J.H.R., Ent., viii., 54).

PHRAGMATOBIA Stephens

fuliginosa (L.)—RUBY TIGER. Common on heather moors all over the district.

CYCNIA Huebner

mendica (Clerck)—MUSLIN. Scarborough (T.W.).

SPILOSOMA Stephens

lutea (Hufn.)—BUFF ERMINE. Common everywhere. The vars. *radiata*, *fasciata* and *intermedia* have been bred from larvae taken near Scarborough (A.S.).

lubricipeda (L.) (*menthastri* Cat. Brit.)—WHITE ERMINE. Of general occurrence but not so common as *lutea*.

DIACRISIA Huebner

sannio (L.)—CLOUDED BUFF. Widely distributed on the moors, but local. Harwood Dale (A.S.T.); near Flask Inn, Robin Hood's Bay, Silpho Moor (M.E. and E.O.); Pickering (A.S.).

ARCTIA Schrank

caja (L.)—GARDEN TIGER. Common and generally distributed. A black variety was bred by A. I. Burnley, 1928 (G.B.W.).

PARASEMIA Huebner

plantaginis (L.)—WOOD TIGER. Common and generally distributed on the moors. The var. *hospita* sometimes occurs.

NOLIDAE

NOLA Leach

strigula (Schiff.)—SMALL BLACK ARCHES. Scarborough (T.W.); this is the only Yorkshire record, but having regard to its known distribution, it seems probable that there has been an error of identification.

ROESELIA Huebner

confusalis (Herr.-Sch.)—LEAST BLACK ARCHES. Scarborough (T.W.); used to occur in Raincliffe Wood (H.W.H.); Pickering, 2 specimens (A.S.).

CYMBIDAE

BENA Billberg

prasinana (L.)—GREEN SILVER-LINES. Used to be very common in the Scarborough area; now occurs occasionally at sugar in Raincliffe Wood; Mr. A. Smith has found the larvae common on oak at Pickering but has not taken the moth at sugar.

SARROTHRIPUS Curtis

revayana (Scop.)—LARGE MARBLED TORTRIX. Scarborough, scarce (T.W.); larvae common on oak at Pickering (A.S.).

CARADRINIDAE

APATELE Huebner

leporina (L.)—MILLER. Rare; odd specimens at sugar in Raincliffe Wood; one at rest at Staintondale (A.S.T.); larvae not uncommon on aspen on Seamer Moor (A.S.T.), on birch at Newtonby-Rawcliffe (A.S.).

alni (L.)—ALDER. Not uncommon at Scarborough (T.W.); occasional specimens still occur.

tridens (Schiff.)—DARK DAGGER. Scarborough (T.W.).

- psi (L.)—GREY DAGGER. Common.
- megacephala (Schiff.)—POPLAR GREY. Larvae very common, even in the town (M.E. and E.O.).
- rumicis (L.)—KNOT GRASS. This is probably common but there are very few records of its occurrence.
- menyanthidis (View.)—LIGHT KNOT GRASS. Fairly common on the higher moors.
- CRANIOPHORA** Snellen
- ligustri (Schiff.)—CORONET. Scarborough, very common (T.W.).
- COLOCASIA** Ochsenheimer
- coryli (L.)—NUT-TREE TUSSOCK. Filey (F.O.M.) ; Scarborough (T.W.).
- CRYPHIA** Huebner
- perla (Schiff.)—MARBLED BEAUTY. Common in many localities.
- AMPHIPYRA** Ochsenheimer
- tragopoginis (L.)—MOUSE. Common.
- GORTYNA** Ochsenheimer
- flavago (Schiff.)—FROSTED ORANGE. Scarborough (T.W.).
- LUPERINA** Boisduval
- testacea (Schiff.)—FLOUNCED RUSTIC. Fairly plentiful on Scarborough Castle Hill and at Hackness (A.S.T.).
- RUSINA** Stephens
- umbratica (Goeze)—BROWN RUSTIC. Fairly common at sugar (A.S.T.).
- NONAGRIA** Ochsenheimer
- typhae (Thunb.)—BULRUSH WAINSCOT. The larvae burrows in Typha stems at Scarborough Mere.
- PANEMERIA** Huebner
- tenebrata (Scop.)—SMALL YELLOW UNDERWING. Scarborough (T.W., R.H.B.) ; plentiful at Pickering (A.S.).
- COSMIA** Ochsenheimer
- trapezina (L.)—DUN-BAR. Common and widely distributed.
- CARADRINA** Ochsenheimer
- clavipalpis (Scop.)—PALE MOTTLED WILLOW. Generally common.
- morpheus (Hufn.)—MOTTLED RUSTIC. Scarborough, common at sugar (A.S.T.).
- taraxaci (Huebner.)—RUSTIC. Scarborough (T.W.).
- MORMO** Ochsenheimer
- maura (L.)—OLD LADY. Occasionally at sugar (A.S.T.).
- RHIZEDRA** Warren
- lutosa (Huebner.)—LARGE WAINSCOT. One at Burniston at sugar, 1911 (A.S.T.).
- ARENOSTOLA** Hampson
- elymi (Treit.)—LYME GRASS. Common on sand-hills at Auburn, south of Bridlington, just outside our area.
- pygmina (Haw.) —SMALL WAINSCOT. Fairly common ; Throxenby Mere and near Falcon Inn (A.S.T.).

PETILAMPA Aurivillius

minima (Haw.)—SMALL DOTTED BUFF. Scarborough (T.W.).

MERISTIS Huebner

trigrammica (Hufn.)—TREBLE LINES. Fairly common at sugar.

THALPOPHILA Huebner

matura (Hufn.)—STRAW UNDERWING. Flamborough Head (E.H.) ; Pickering (A.S.).

PHLOGOPHORA Treitschke

meticulosa (L.)—ANGLE SHADES. Common ; it has occurred in almost every month in the year.

EUPLEXIA Stephens

lucipara (L.)—SMALL ANGLE SHADES. Common ; one year the larvae did much damage to ferns in greenhouses.

XYLOPHASIA Stephens

remissa (Huebner.)—DUSKY BROCADE. Common at sugar.

crenata (Hufn.)—CLOUDED BORDERED BRINDLE. Abundant at sugar. The var. *combusta* Haw. is almost as common as the type (A.S.T.).

lithoxylea (Schiff.)—LIGHT ARCHES. Fairly common at sugar.

sublusttris (Esp.)—REDDISH LIGHT ARCHES. Scarborough (T.W.).

monoglypha (Hufn.)—DARK ARCHES. Abundant and variable ; black forms, var. *infuscata* White are quite common.

scolopacina (Esp.)—SLENDER BRINDLE. Scarborough (T.W.).

hepatica (Huebner.)—CLOUDED BRINDLE. Scarborough (T.W.) ; not common (A.S.T.).

furva (Schiff.)—CONFUSED. Scarborough (S.M.).

APAMEA Ochsenheimer

sordens (Hufn.)—RUSTIC SHOULDER KNOT. Common at sugar.

unanimis (Huebner.)—SMALL CLOUDED BRINDLE. Uncommon in the Scarborough district.

pabulatricula (Brahm.)—UNION RUSTIC. Common at Scarborough (T.W.).

CELAENA Stephens

haworthii Curt.—HAWORTH'S MINOR. Abundant on peat bog near Falcon Inn (A.S.T.) ; Scarborough (T.W.).

secalis (L.)—COMMON RUSTIC. Very common at sugar.

HYDRAECIA Guenée

micacea (Esp.)—ROSY RUSTIC. Common in Scarborough district.

petasitis (Doubl.)—BUTTERBUR. Occasional ; Forge Valley.

oculea (L.)—EAR MOTH. Not uncommon at ragwort flowers. Scarborough (T.W.) ; moors above Hackness (A.S.T.).

MIANA Stephens

literosa (Haw.)—ROSY MINOR. Common at sugar.

PROCUS Oken

strigilis (Clerck)—MARBLED MINOR. Abundant at sugar, nearly all are var. *aethiops* (Haw.).

fasciunculus (Haw.)—MIDDLE-BARRED MINOR. Common and variable.

HELIOTHIS Ochsenheimer

armigera (Huebner.)—SCARCE BORDERED STRAW. A fine female example was taken at Scarborough by W. Simmons in 1866 (Ent. Ann., 1867, p. 153).

EUXOA Huebner

obelisca (Schiff.)—SQUARE-SPOT DART. Scarborough, not uncommon (T.W.).

nigricans (L.)—GARDEN DART. Occasional.

tritici (L.)—WHITE-LINE DART. Common.

AGROTIS Ochsenheimer

segetum (Schiff.)—TURNIP MOTH. Very common.

clavis (Hufn.)—HEART AND CLUB. Uncommon.

exclamationis (L.)—HEART AND DART. Very common.

ypsilon (von Rott.)—DARK SWORD GRASS. Abundant in Sept., 1911, at sugar (A.S.T.).

EUROIS Huebner

occulta (L.)—GREAT BROCADE. One female at rest, Wrench Green, -/8/1909 (A.S.T.).

PERIDROMA Huebner

saucia (Huebner.)—PEARLY UNDERWING. Occasional.

LYCOPHOTIA Huebner

porphyrea (Schiff.)—TRUE LOVER'S KNOT. Very common on all heaths.

OCHROPLEURA Huebner

pecta (L.)—FLAME SHOULDER. Common at sugar; it very readily takes to flight.

GRAPHIPHORA Ochsenheimer

augur (Fabr.)—DOUBLE DART. Very common.

AMATHES Huebner.

agathina (Dup.)—HEATH RUSTIC. Larvae common on *Calluna*.

castanea (Esp.)—NEGLECTED. Var. *neglecta* (Huebner.) occurs on Seamer Moor (A.S.T.).

c-nigrum (L.)—SETACEOUS HEBREW CHARACTER. Common.

triangulum (Hufn.)—DOUBLE SQUARE-SPOT. Not common.

xanthographa (Schiff.)—SQUARE-SPOT RUSTIC. Abundant and very variable.

umbrosa (Huebner.)—SIX-STRIPED RUSTIC. Common at light and ragwort bloom and occasionally at sugar.

stigmatica (Huebner.)—SQUARE-SPOTTED CLAY. Local; plentiful on Oliver's Mount (T.W.), and on sugar at Wrench Green (A.S.T.).

glareosa (Esp.)—AUTUMNAL RUSTIC. Common on the moors.

depuncta (L.)—PLAIN CLAY. Scarborough, sometimes abundant (T.W.).

baja (Schiff.)—DOTTED CLAY. Common.

SPAELOTIS Boisduval

ravida (Schiff.)—STOUT DART. Uncommon on Seamer Moor.

DIARSIA Huebner

brunnea (Schiff.)—PURPLE CLAY. Common.

festiva (Schiff.)—INGRAILED CLAY. Common and very variable.

rubi (View.)—SMALL SQUARE SPOT. Occasional.

dahlii (Huebner.)—BARRED CHESTNUT. Seamer Moor, on sugar and heather bloom (A.S.T.).

TRIPHAENA Ochsenheimer

pronuba (L.)—LARGE YELLOW UNDERWING. Abundant and variable, some with grey, almost glaucous, primaries.

comes (Huebner.)—LESSER YELLOW UNDERWING. Common.

janthina (Schiff.)—LESSER BROAD-BORDER. Not common; single specimens from Scarborough (A.S.T.), and Scalby (G.B.W.).

AXYLIA Huebner

putris (L.)—FLAME. Very common, Scarborough (S.M.), but not recorded for many years.

PHALAENA Linnaeus

typica L.—GOTHIC. Common.

LAMPRA Huebner

fimbriata (von Schreb.)—BROAD-BORDERED YELLOW UNDERWING. Occasional at sugar or as larva.

CERASTIS Ochsenheimer

rubricosa (Schiff.)—RED CHESTNUT. Common.

GYPSITEA Tams

leucographa (Schiff.)—WHITE-MARKED. Raincliffe Wood, somewhat uncommon.

ANAPLECTOIDES McDonnough

prasina (Schiff.)—GREEN ARCHES. Not uncommon in Raincliffe Wood and on Seamer Moor.

BRACHIONYCHA Huebner

sphinx (Hufn.)—SPRAWLER. Scarborough, common (T.W.); as larva at Wrench Green (A.S.T.).

APOROPHYLA Guenée

lutulenta (Schiff.)—DEEP-BROWN DART. Above Wrench Green, at edge of Moor (A.S.T.).

CONISTRA Huebner

vaccinii (L.)—CHESTNUT. Abundant.

ANCHOSCELIS Guenée

lunosa (Haw.)—LUNAR UNDERWING. Scarborough (T.W.), occasional (A.S.T.).

helvola (L.)—FLOUNCHED CHESTNUT. Common and very richly coloured.

litura (L.)—BROWN-SPOT PINION. Abundant at sugar.

ATETHMIA Huebner

centrago (Haw.)—CENTRE-BARRED SALLOW. Scarborough, not uncommon (T.W.); one in Avenue Road, 1948 and 1949 (E.O.).

TILIACEA Tutt

citrago (L.)—ORANGE SALLOW. Hayburn Wyke (G.T.P.); Raincliffe Wood (H.W.H.).

CITRIA Huebner

lutea (Stroem, H.)—PINK-BARRED SALLOW. Common and generally distributed.

CIRRHIA Huebner

fulvago (L.)—SALLOW. Common and generally distributed, ab. *flavescens* (Esp.) occurs.

gilvago (Schiff.)—DUSKY-LEMON SALLOW. Raincliffe Wood, 1900 (T.W.L.).

AGROCHOLA Huebner

cellularis (Hufn.)—BRICK. Common and widely distributed.

lychnidis (Schiff.)—BEARDED CHESTNUT. Scarborough (J.H.R.), not common.

macilenta (Huebner.)—YELLOW-LINE QUAKER. Common.

lota (Clerck)—RED-LINE QUAKER. Not common.

PARASTICHTIS Huebner

suspecta (Huebner.)—SUSPECTED. Seamer Moor at sugar (H.W.H.).

ypsilon (Schiff.)—DINGY SHEARS. Uncommon (A.S.T.).

EUPSILIA Huebner

transversa (Hufn.)—SATELLITE. Very common and variable; Raincliffe Wood at sugar in spring (E.O.).

DASYPOLIA Guenée

templi (Thunb.)—BRINDLED OCHRE. Common at Scarborough (T.W.), but only very occasional specimens of late years.

ALLOPHYES Tams

oxyacanthae (L.)—GREEN BRINDLED CRESCENT. Common.

CUCULLIA Schrank

chamomillae (Schiff.)—CHAMOMILE SHARK. One at Scalby, -/6/1915 (A.S.T.).

umbratica (L.)—SHARK. Uncommon; Scarborough (T.W.); Seamer (G.B.W.).

verbasci (L.)—MULLEIN. Larvae on mullein, Scarborough (A.S.T.); on figwort in Forge Valley (G.B.W.).

XYLENA Ochsenheimer

exoleta (L.)—SWORD-GRASS. Common.

vetusta (Huebner.)—RED SWORD-GRASS. Scarborough (T.W.).

LITHOMOIA Huebner

solidaginis (Huebner.)—GOLDEN-ROD BRINDLE. Very local; Wrench Green (A.S.T.); Scarborough, probably Raincliffe Wood (T.W.).

XYLOCAMPA Guenée

areola (Esp.)—EARLY GREY. Common and widely distributed.

GRIPOSIA Tams

aprilina (L.)—MERVEILLE DU JOUR. Common.

ANTITYPE Huebner

chi (L.)—GREY CHI. Common and widely distributed, especially on walls on the moors.

flavicincta (Schiff.)—LARGE RANUNCULUS. Common as both larva and moth.

BOMBYCIA Stephens*viminalis* (Fabr.)—MINOR SHOULDER-KNOT. Scarborough (T.W.).**EUMICHTIS** Huebner*lichena* (Huebner.)—FEATHERED RANUNCULUS. Common at Scarborough on Castle walls (J.B.).*adusta* (Esp.)—DARK BROCADE. Scarborough at sugar (A.S.T.).**DRYOBOTA** Lederer*protea* (Schiff.)—BRINDLED GREEN. Common.**LEUCANIA** (Ochsenheimer) Huebner*pudorina* (Schiff.)—STRIPED WAINSCOT. Scarborough (T.W.).*impura* (Huebner.)—SMOKY WAINSCOT. Occasional.*pallens* (L.)—COMMON WAINSCOT. Abundant at sugar. In 1911 specimens of a second brood in Sept. (A.S.T.).*lythargyria* (Esp.)—CLAY. Common.*conigera* (Schiff.)—BROWN-LINE BRIGHT-EYE. Common.*comma* (L.)—SHOULDER STRIPED WAINSCOT. Common.**ORTHOSIA** Ochsenheimer*incerta* (Hufn.)—CLOUDED DRAB. Abundant.*gracilis* (Schiff.)—POWDERED QUAKER. Scarborough, three specimens at sallow (E.O.).*stabilis* (Schiff.)—COMMON QUAKER. Abundant.*populi* (Stroem, H.)—LEAD-COLOURED DRAB. Scarborough (T.W.); larvae at Fylinghall (A.S.T.).*cruda* (Schiff.)—SMALL QUAKER. Common.*munda* (Schiff.)—TWIN-SPOTTED QUAKER. Sparingly at sallow.*gothica* (L.)—HEBREW CHARACTER. Abundant.**CHARAEAS** Stephens*graminis* (L.)—ANTLER MOTH. Generally distributed and at times common.**THOLERA** Huebner*popularis* (Fabr.)—FEATHERED GOTHIC. Scarborough (T.W.); Hackness at light (A.S.T.).**PANOLIS** Huebner*griseovariegata* (Goeze)—PINE BEAUTY. Fairly common and widely distributed.**HADA** Billberg*dentina* (Schiff.)—SHEARS. Uncommon.**HADENA** Schrank**S. HADENA** s.s.*consersa* (Schiff.)—MARBLED CORONET. Scarborough, not uncommon (T.W.).*lepida* (Esp.)—TAWNY SHEARS. Scarborough (T.W.).*bicruris* (Hufn.)—LYCHNIS. Flamborough Head (E.H.).*cucubali* (Schiff.)—CAMPION. Scarborough (T.W.); Levisham (A.S.T.).**S. HECATERA** Guenée*serena* (Schiff.)—BROAD-BARRED WHITE. Rare; Ganton (A.S.T.); bred from larvae, Scarborough (E.O.).

- glauc*a (Huebn.)—GLAUCOUS SHEARS. Widely distributed on all the moors but not common.
- S. LACANOBIA** Billberg
thalassina (Hufn.)—PALE-SHOULDERED BROCADE. Fairly common.
- HELIOPHOBUS** Boisduval
saponariae (Borkh.)—BORDERED GOTHIC. Sparingly most years at sugar on Seamer Moor (A.S.T.).
- DIATARAXIA** Huebner
oleracea (L.)—BRIGHT-LINE BROWN-EYE. Common.
- CERAMICA** Guenée
pisi (L.)—BROOM MOTH. Common.
- POLIA** (Ochsenheimer) Treitschke
nebulosa (Hufn.)—GREY ARCHES. Fairly common at sugar, many dusky specimens.
- MAMESTRA** Ochsenheimer
brassicae (L.)—CABBAGE MOTH. Abundant.
- MELANCHRA** Huebner
persicariae (L.)—DOT. Common.
- ANARTA** Ochsenheimer
myrtilli (L.)—BEAUTIFUL YELLOW UNDERWING. Very common on all the moors during most of the summer.

PLUSIIDAE

- ZANCLOGNATHA** Lederer
tarsipennalis (Treit.)—FANFOOT. Scarborough on wild raspberry (T.W.).
- nemoralis* (Fabr.)—SMALL FANFOOT. Fairly common in the rides in Raincliffe Wood (A.S.T.).
- SCHRANKIA** Huebner
taenialis (Huebn.)—WHITE-LINE SNOUT. Scarborough (T.W.).
- costaestrigalis* Steph.—PINION-STREAKED SNOUT. Scarborough (T.W.).
- HYPENA** Schrank
proboscidalis (L.)—SNOUT. Common among nettles everywhere.
- OPHIUSA** Ochsenheimer
pastinum Treit.—BLACKNECK. Common at Scarborough (G.T.P., J.H.R.) ; Burniston Wyke (A.S.T.) ; Pickering (A.S.).
- SCOLIOPTERYX** Germar
libatrix (L.)—HERALD. Common most of the year.
- CATOCALA** Schrank
fraxini (L.)—CLIFDEN NONPAREIL. One at Scarborough, -/9/1859 (T.W.) ; one in Spa grounds, 3/10/1896 (J.H.R.).
- nupta* (L.)—RED UNDERWING. Very rare ; one specimen under coping stone of Oliver's Mount School, 4/8/1876 (G.T.) ; one specimen in Spa gardens, -/9/53 (H.W.D.).
- EUCLIDIMERA** Hampson
mi (Clerck)—MOTHER SHIPTON. Fairly common on the Wolds and on the moors where the limestone outcrops.

ECTYPA Billberg

glyphica (L.)—BURNET COMPANION. Occasional but well distributed.

PHYTOMETRA Haworth

viridaria (Clerck)—SMALL PURPLE-BARRED. Fairly common, usually where milkwort (*Polygala*) grows, on the moors and on the cliffs.

POLYCHRISIA Huebner

moneta (Fabr.)—GOLDEN PLUSIA. First seen in the district about 1919 and now quite common.

PLUSIA Ochsenheimer

chrysis (L.)—BURNISHED BRASS. Fairly common.

bractea (Schiff.)—GOLD SPANGLE. Rare ; Cayton Bay, one specimen, 6/7/1917 (G.W.T.).

festucae (L.)—GOLD SPOT. On iris at lower end of Langdale, fairly common (G.L.M.).

iota (L.)—PLAIN GOLDEN-Y. Fairly common.

v-aureum (Huebner.)—BEAUTIFUL GOLDEN-Y. Common.

gamma (L.)—SILVER-Y. Common, in some years abundant owing to immigration.

interrogationis (L.)—SCARCE SILVER-Y. Not uncommon on all the moors but especially near the Falcon Inn.

ABROSTOLA Ochsenheimer

tripartita (Hufn.)—SPECTACLE. Occasional, at one time very common ; Scarborough, 1943 (H.W.H.).

EPISEMA Ochsenheimer

caeruleocephala (L.)—FIGURE OF EIGHT. Common.

LYMANTRIIDAE

ORGYIA Ochsenheimer

antiqua (L.)—VAPOURER. Fairly common.

DASYCHIRA Stephens

pudibunda (L.)—PALE TUSSOCK. Very common at Scarborough (T.W.) ; larvae beaten at Broxa, 1947 (M.E., E.O.).

EUPROCTIS Huebner

chrysorrhoea (L.)—YELLOW-TAIL. Abundant.

phaeorrhoea (Don.)—BROWN-TAIL. Rare ; one specimen picked up in Scarborough (G.B.W.), also recorded by H. Marsh.

LEUCOMA Huebner

salicis (L.)—WHITE SATIN. Rare ; a single specimen (A.S.T.).

STERRHIDAE

STERRHA Huebner

aversata (L.)—RIBAND WAVE. Common.

dimidiata (Hufn.)—SINGLE-DOTTED WAVE. Scarborough (T.W.).

PYLARGE Herrich-Schaeffer

fumata (Steph.)—SMOKY WAVE. Scarborough (G.T.P.).

SCOPULA Schrank

remutaria (Huebner.)—CREAM WAVE. Common.

- immutata* (L.)—LESSER CREAM WAVE. Scarborough (S.M.).
imitaria (Huebner.)—SMALL BLOOD-VEIN. Scarborough (S.M.).
rubiginata (Hufn.)—TAWNY WAVE. Scarborough (J.H.R.).
COSYMBIA Huebner
trilinearis (Borkh.)—CLAY TRIPLE LINES. Scarborough (S.M.).

GEOMETRIDAE

- JODIS** Huebner
lactearia (L.)—LITTLE EMERALD. Widely distributed and fairly common.
GEOMETRA Linnaeus
papilionaria (L.)—LARGE EMERALD. Fairly common in Raincliffe Wood.
PSEUDOTERPNA Huebner
pruinata (Hufn.)—GRASS EMERALD. Scarborough (T.W.).

HYDRIOMENIDAE

- ACASIS** Duponchel
viretata (Huebner.)—YELLOW-BARRED BRINDLE. Scarborough (T.W.) ; Hayburn Wyke (S.W.) ; Raincliffe Wood (M.E., E.O.).
TRICHOPTERYX Huebner
carpinata (Borkh.)—EARLY TOOTH-STRIPED. Scarborough, very common (T.W.) ; Seamer Moor, common on birches (G.B.W.).
LOBOPHORA Curtis
halterata (Hufn.)—SERAPHIM. Scarborough (G.T.P.).
CHLOROCLYSTIS Huebner
coronata (Gey.)—V-PUG. Scarborough (S.M.).
rectangulata (L.)—GREEN PUG. Scarborough (S.M.) ; larvae plentiful in Forge Valley on wild apple (A.S.).
GYMNOSCELIS Mabille
pumilata (Huebner.)—DOUBLE-STRIPED PUG. Scarborough (S.M.).
EUPITHECIA Curtis
venosata (Fabr.)—NETTED PUG. Scarborough (T.W.).
goossensiata Mab.—LING PUG. Larva abundant on *Calluna*.
absinthiata (Clerck)—WORMWOOD PUG. Common near Scarborough (S.M.).
albipunctata (Haw.)—WHITE-SPOTTED PUG. Scarborough (T.W.).
vulgata (Haw.)—COMMON PUG. Common.
centaureata (Schiff.)—LIME-SPECK PUG. Common and well distributed.
[icterata (de Vill., C. J.)] s. subfulvata (Haw.)—TAWNY SPECKLED PUG. Flamborough Head (E.H.).
satyrata (Huebner.)—SATYR PUG. Scarborough (S.M.).
pulchellata Steph.—FOXGLOVE PUG. Scarborough (T.W.) ; Falling Foss (G.B.W.).
succenturiata (L.)—BORDERED PUG. Scarborough (S.M.).
castigata (Huebner.)—GREY PUG. Scarborough (F.O.M.).
lariciata Frey.—LARCH PUG. Common in larch plantations.

- virgaureata* Doubt.—GOLDEN-ROD PUG. Scarborough (T.W.) ; Langdale (G.B.W.).
- plumbeolata* (Haw.)—LEAD-COLOURED PUG. Scarborough (S.M.).
- pygmeata* (Huebner.)—MARSH PUG. Scarborough (T.W.) ; Pickering (A.S.).
- tenuiata* (Huebner.)—SLENDER PUG. Larva not uncommon in willow catkins.
- trisignaria* Herr.-Sch.—TRIPLE-SPOTTED PUG. Scarborough (T.W.).
- indigata* (Huebner.)—OCHREOUS PUG. Scarborough district, not uncommon on larch.
- abbreviata* Steph.—BRINDLED PUG. Very common (T.W.).
- dodoneata* Guen.—OAK-TREE PUG. Scarborough (T.W.).
- nanata* (Huebner.)—NARROW-WINGED PUG. Common on the moors.
- EUCYMATOGE** Huebner
- scabiosata* (Borkh.)—SHADED PUG. Scarborough (F.O.M.).
- HORISME** Huebner
- tersata* (Schiff.)—FERN. Scarborough (T.W.).
- CHESIAS** Treitschke
- legatella* (Schiff.)—STREAK. Scarborough (T.W.) ; Staintondale (G.B.W.).
- ANAITIS** Duponchel
- plagiata* (L.)—TREBLE-BAR. Scarborough (J.H.R.) ; Forge Valley (G.W.B.) ; Pickering (A.S.).
- CALOCALPE** Huebner
- undulata* (L.)—SCALLOP SHELL. Uncommon, but several specimens have occurred near Scarborough of late years (I.P.R., M.E., E.O.).
- LYGRIS** Huebner
- prunata* (L.)—PHOENIX. Fairly common.
- testata* (L.)—CHEVRON. Abundant wherever *Calluna* grows.
- populata* (L.)—NORTHERN SPINACH. Common on Silpho Moor and in Raincliffe Wood.
- mellinata* (Fabr.)—SPINACH. Common in gardens.
- EPIRRHOE** Huebner
- galiata* (Huebner.)—GALIU CARPET. Common.
- alternata* (Muell., O. F.)—COMMON CARPET. Very common.
- tristata* (L.)—SMALL ARGENT AND SABLE. Scarborough (T.W.) ; common on Silpho Moor, at Staintondale (G.B.W.), and in other localities.
- EULYPE** Huebner
- hastata* (L.)—ARGENT AND SABLE. Scarborough (S.M.).
- LYNCOMETRA** Prout
- ocellata* (L.)—PURPLE-BAR. Scarborough district, common (A.S.).
- THERA** Stephens
- obeliscata* (Huebner.)—GREY PINE CARPET. Common.
- firmata* (Huebner.)—PINE CARPET. Common.

CIDARIA Treitschke

fulvata (Forst.)—BARRED YELLOW. Scarborough (G.B.W.).

CHLOROCLYSTA Huebner

miata (L.)—AUTUMN GREEN CARPET. Scarborough (J.H.R.) ; Raincliffe Wood (E.O.).

siterata (Hufn.)—RED-GREEN CARPET. Scarborough (T.W.).

HYDRIOMENA Huebner

furcata (Thunb.)—JULY HIGHFLYER. Abundant everywhere and very variable.

impluviata (Schiff.)—MAY HIGHFLYER. Scarborough (S.M.).

ruberata (Frey.)—RUDDY HIGHFLYER. Scarborough (T.W.) ; Hayburn Wyke, larvae common on old sallows on shore in Sept. (G.T.P., G.B.W.).

DYSSTROMA Huebner

truncata (Hufn.)—COMMON MARBLED CARPET. Common and very variable.

citrata (L.)—DARK MARBLED CARPET. Common.

ECLIPTOPERA Warren

silacea (Schiff.)—SMALL PHOENIX. Common.

LAMPROPTERYX Stephens

suffumata (Schiff.)—WATER CARPET. Common.

ENTEPHRIA Lederer

caesiata (Schiff.)—GREY MOUNTAIN CARPET. Common.

flavicinctata (Huebner.)—YELLOW-RINGED CARPET. Rare ; one specimen near Scarborough, 16/7/1891 (R. South, Moths of the British Isles, II, 193).

EAROPHILA Gumpenberg

badiata (Huebner.)—SHOULDER STRIPE. Common among roses.

COENOTEPHRIA Prout

derivata (Schiff.)—STREAMER. Common.

EUPHYIA Huebner

bilineata (L.)—YELLOW SHELL. Abundant and variable.

PERIZOMA Huebner

taeniata (Steph.)—BARRED CARPET. Scarborough (T.W.).

alchemillata (L.)—SMALL RIVULET. Scarborough (T.W.) ; Forge Valley, Pickering (A.S.).

affinitata (Steph.)—RIVULET. Scarborough (T.W.) ; Forge Valley (A.S.).

albulata (Schiff.)—GRASS RIVULET. Scarborough, fairly common.

flavofasciata (Thunb.)—SANDY CARPET. Scarborough, common (T.W.).

MESOLEUCA Huebner

albicillata (L.)—BEAUTIFUL CARPET. Fairly common, Silpho Moor, Raincliffe Wood, etc.

ASTHENA Huebner

albulata (Hufn.)—SMALL WHITE WAVE. Scarborough (G.B.W.) ; Pickering, common ; Langdale End (A.S.).

PELURGA Huebner

comitata (L.)—DARK SPINACH. Scarborough (T.W.).

OPEROPHTHERA Huebner

brumata (L.)—WINTER MOTH. Abundant.

fagata (Scharf.)—NORTHERN WINTER MOTH. Common.

EUCHOECA Huebner

obliterata (Hufn.)—DINGY SHELL. Fairly common.

HYDRELIA Huebner

flammeolaria (Hufn.)—SMALL YELLOW WAVE. Scarborough (T.W.) ; Pickering, common ; Forge Valley (A.S.).

sylvata (Schiff.)—WAVED CARPET. Scarborough (T.W.).

DISCOLOXIA Warren

blomeri (Curt.)—BLOMER'S RIVULET. Widely distributed ; Pickering (F.O.M.) ; Scarborough (G.T.P., T.W.) ; Sledmere (G.T.P.) ; Raincliffe Wood, fairly common (G.B.W.).

OPORINIA Huebner

dilutata (Borkh.)—NOVEMBER MOTH. Abundant.

autumnata (Borkh.)—AUTUMNAL MOTH. Common.

filigrammaria Herr.-Sch.—SMALL AUTUMNAL CARPET. Scarborough (T.W.).

VENUSIA Curtis

cambrica Curt.—WELSH WAVE. Scarborough, common (T.W.) ; Forge Valley (A.S.).

XANTHORHOE Huebner

designata (Hufn.)—FLAME CARPET. Scarborough (T.W.).

munitata (Huebner.)—RED CARPET. Scarborough (T.W.).

montanata (Schiff.)—SILVER-GROUND CARPET. Abundant and somewhat variable.

fluctuata (L.)—GARDEN CARPET. Abundant and variable.

LARENTIA Treitschke

cervinalis (Scop.)—MALLOW. Common at Scarborough ; larvae on mallow on Castle Hill.

ORTHOLITHA Huebner

mucronata (Scop.)—LEAD BELLE. Common near Scarborough and on the Wolds.

limitata (Scop.)—SHADED BROAD-BAR. Plentiful.

bipunctaria (Schiff.)—CHALK CARPET. Common on the cliffs, Filey (G.T.) ; Flamborough, very common (E.H.) ; Scarborough (G.T.P.).

CALOSTIGIA Huebner

multistrigaria (Haw.)—MOTTLED GREY. Scarborough (T.W., A.S.).

didymata (L.)—TWIN-SPOT CARPET. Abundant.

salicata (Huebner.)—STRIPED TWIN-SPOT CARPET. Scarborough (T.W.).

olivata (Schiff.)—BEECH-GREEN CARPET. Scarborough (T.W.) ; Silpho Moor (G.B.W.) ; Forge Valley, Pickering (A.S.).

pectinataria (Knoch)—GREEN CARPET. Scarborough (G.T.P.) ; Silpho Moor (G.B.W.).

BREPHIDAE

ODEZIA Boisduval*atrata* (L.)—CHIMNEY SWEEPER. Common.**ALSOPHILA** Huebner*aescularia* (Schiff.)—MARCH MOTH. Common.**BREPHOS** Ochsenheimer*parthenias* (L.)—ORANGE UNDERWING. Common; Seamer Moor, Lady Edith's Drive (E.O.); Langdale (G.B.W., G.L.M.).
notha (Huebner.)—LIGHT ORANGE UNDERWING. Scarborough (T.W.)

SELIDOSEMIDAE

OPISTHOGRAPTIS Huebner*luteolata* (L.)—BRIMSTONE. Abundant.**SEMIOTHISA** Huebner*liturata* (Clerck)—TAWNY-BARRED ANGLE. Scarborough (T.W.); Silpho, fairly common (M.E., E.O.).**CHIASMIA** Huebner*clathrata* (L.)—LATTICED HEATH. Flamborough, common (E.H.); Scarborough, very common (G.T.P.); Burniston, common on cliffs (A.S.).**ITAMA** Huebner*brunneata* (Thunb.)—RANNOCH LOOPER. In "Yorkshire Lepidoptera," p. 208, G.T.P. records a specimen of this species taken at Scarborough by R. H. Barker in 1894 (Nat., March, 1895), and states that he has seen the moth. This record certainly needs confirmation.*wauaria* (L.)—V-MOTH. Common.**ECTROPIS** Huebner*punctulata* (Schiff.)—GREY BIRCH. Scarborough (S.M.).*bistortata* (Goeze)—ENGRAILED. Common.*crepuscularia* (Huebner.)—SMALL ENGRAILED. Raincliffe Wood, common (G.B.W.).**CLEORA** Curtis*lichenaria* (Hufn.)—BRUSSELS LACE. Not common but widely distributed. Scarborough (T.W.); Flamborough Head (E.H.); Raincliffe Wood, Wrench Green (G.B.W.).*repandata* (L.)—MOTTLED BEAUTY. Common.*rhomboidaria* (Schiff.)—WILLOW BEAUTY. Common.**BUPALUS** Leach*pinarius* (L.)—BORDERED WHITE. Common in pine woods.**EMATURGA** Lederer*atomaria* (L.)—COMMON HEATH. Abundant on the moors.**HEMEROPHILA** Stephens*abruptaria* (Thunb.)—WAVED UMBER. Scarborough (T.W., A.S.).**ERANNIS** Huebner*leucophaearia* (Schiff.)—SPRING USHER. Raincliffe Wood on old oaks (G.B.W.); Lady Edith's Drive (E.O.).*progemma* (Huebner.)—DOTTED BORDER. Abundant.

- aurantiaria* (Esp.)—SCARCE UMBER. Fairly common, Raincliffe Wood.
- defoliaria* (Clerck)—MOTTLED UMBER. Abundant.
- APOCHEIMA** Huebner
- hispidaria* (Schiff.)—SMALL BRINDLED BEAUTY. Scarborough (S.M.).
- PHIGALIA** Duponchel
- pilosaria* (Schiff.)—PALE BRINDLED BEAUTY. Common. Melanic forms are becoming increasingly common.
- LYCIA** Huebner
- hirtaria* (Clerck)—BRINDLED BEAUTY. Scarborough (T.W.).
- BISTON** Leach
- strataria* (Hufn.)—OAK BEAUTY. Scarborough (T.W., A.S.).
- betularia* (L.)—PEPPERED MOTH. Common. The melanic form, *doubledayaria* Mill., is now much commoner than the type.
- ABRAXAS** Leach
- grossulariata* (L.)—MAGPIE MOTH. Abundant. Black larvae are common but yield typical moths.
- sylvata* (Scop.)—CLOUDED MAGPIE. Raincliffe Wood and Forge Valley, very common. A lead-coloured form used to occur at Sledmere (R.H.B.).
- LIGDIA** Guenée
- adustata* (Schiff.)—SCORCHED CARPET. Scarborough (T.W.).
- LOMASPILIS** Huebner
- marginata* (L.)—CLOUDED BORDER. Common.
- THERIA** Huebner
- rupicaprararia* (Schiff.)—EARLY MOTH. Common.
- BAPTA** Stephens
- limaculata* (Fabr.)—WHITE-PINION SPOTTED. Raincliffe Wood, -/5/1938 (H.W.H.).
- GNOPHOS** Treitschke
- obscurata* (Schiff.)—ANNULET. Plentiful on the coast (G.T.P.) ; Filey, Scarborough (G.T.P., A.S.) ; Flamborough Head (E.H.).
- LITHINA** Huebner
- chlorosata* (Scop.)—BROWN SILVER-LINE. Common among bracken.
- DYSCIA** Huebner
- fagaria* (Thunb.)—GREY SCALLOPED-BAR. Scarborough (T.W.) ; Silpho (E.H.).
- PERCONIA** Huebner
- strigillaria* (Huebner.)—GRASS WAVE. Scarborough (J.H.R.) ; very common on the moors (M.E., E.O.).
- CABERA** Treitschke
- pusaria* (L.)—COMMON WHITE WAVE. Abundant.
- ab. rotundaria* (Haw.)—ROUND-WINGED WAVE. Quite common.
- exanthemata* (Scop.)—COMMON WAVE. Common.
- OURAPTERYX** Leach
- sambucaria* (L.)—SWALLOW-TAIL MOTH. Common.

- ELLOPIA** Treitschke
prosapiaria (L.)—BARRED RED. Common on pines.
- CAMPAEA** Lamarck
margaritata (L.)—LIGHT EMERALD. Common.
- ANAGOGE** Huebner
pulveraria (L.)—BARRED UMBER. Scarborough (J.H.R.) ;
 Pickering (A.S.).
- PLAGODIS** Huebner
dolabraria (L.)—SCORCHED WING. Scarborough (T.W., G.B.W.) ;
 Pickering (A.S.).
- EPIONE** Duponchel
repandaria (Hufn.)—BORDERED BEAUTY. Scarborough (T.W.) ;
 Pickering, Burniston (A.S.).
- SELENIA** Huebner
bilunaria (Esp.)—EARLY THORN. Common.
lunaria (Schiff.)—LUNAR THORN. Common.
- HYGROCHROA** Huebner
syringaria (L.)—LILAC BEAUTY. Several specimens of moth and
 larva on Seamer Moor and Lady Edith's Drive in 1947-48 (M.E.,
 E.O.).
- COLOTOIS** Huebner
pennaria (L.)—FEATHERED THORN. Common.
- DEUTERONOMOS** Prout
alniaria (L.)—CANARY-SHOULDERED THORN. Common
 (J.H.R.).
erosaria (Schiff.)—SEPTEMBER THORN. Scarborough (T.W.,
 A.S.).
- ENNOMOS** Treitschke
quercinaria (Hufn.)—AUGUST THORN. Scarborough (S.M.).
- GONODONTIS** Huebner
bidentata (Clerck)—SCALLOPED HAZEL. Common. Black forms
 are fairly common.
- CROCALLIS** Treitschke
elinguaria (L.)—SCALLOPED OAK. Common.

POLYPLOCIDAE

- HABROSYNE** Huebner
derasa (L.)—BUFF ARCHES. Frequent at sugar in Raincliffe
 Wood some years, absent in others.
- THYATIRA** Ochsenheimer
batis (L.)—PEACH BLOSSOM. Generally distributed, common in
 Raincliffe Wood.
- TETHEA** Ochsenheimer
duplaris (L.)—LESSER SATIN MOTH. Occasional in Raincliffe
 Wood, Langdale.
or (Schiff.)—POPLAR LUTESTRING. Common, Scarborough
 (T.W., A.S.).

ASPHALIA Huebner

diluta (Schiff.)—LESSER LUTESTRING. Scarborough (T.W., A.S.).

ACHLYA Billberg

flavicornis (L.)—YELLOW-HORNED. Generally common among birch on Seamer Moor and in Langdale.

POLYPLOCA Huebner

ridens (Fabr.)—FROSTED GREEN. Raincliffe Wood, once (H.W.H.).

SPHINGIDAE

MACROGLOSSA Scopoli

stellatarum (L.)—HUMMING-BIRD HAWK MOTH. Common in some years owing to immigration, e.g., 1947, when it occurred all over the district; almost absent in other years.

HIPPOTION Huebner

celerio (L.)—SILVER-STRIPED HAWK MOTH. Very rare; Scarborough, female on doorpost, 13/9/1917 (D.W.B.); male at Falsgrave, 7/10/1920 (G.B.W.).

DEILEPHILA Laspeyres

porcellus (L.)—SMALL ELEPHANT HAWK MOTH. Occasional; commoner on the Wolds.

elpenor (L.)—LARGE ELEPHANT HAWK MOTH. Common in T. Wilkinson's time, but very rare at the beginning of the century (A.S.T.). Now quite common again, especially on Fuchsia.

SPHINX Linnaeus

ligustri L.—PRIVET HAWK MOTH. Rare; Scarborough (S.M.); has not been recorded since.

ACHERONTIA Ochsenheimer

atropos (L.)—DEATH'S-HEAD HAWK MOTH. Occurs most years in small numbers, depending on immigration.

SMERINTHUS Latreille

ocellatus (L.)—EYED HAWK MOTH. Rare in Mr. Tetley's time but now getting quite common. Ova taken in How Gill, 3/8/1927 (G.B.W.).

DAPHNIS Huebner

nerii (L.)—OLEANDER HAWK MOTH. A single specimen was taken near Scarborough Museum about 1927.

CELERIO Oken

[*lineata* Fabr.] v. *livornica* (Esp.)—STRIPED HAWK MOTH. One specimen taken at Scalby, 27/7/1946 (A.S.); a live specimen in fine condition was brought to the Museum in early August, 1952 (E. F. Gilmour).

euphorbiae (L.)—SPURGE HAWK MOTH. Stainton gives Scarborough as a locality but this record is very uncertain.

galii (von Rott.)—BEDSTRAW HAWK MOTH. Rare; three specimens were recorded by T. W.; one in 1888 by W. Copley; two on Seamer Moor in 1939 (I.P.R.); one was taken at marigold flowers, 1944, and brought to me (G.B.W.).

HERSE Oken

convolvuli (L.)—CONVOLVULUS HAWK MOTH. Another rare moth whose incidence depends entirely on immigration.

LAOTHOE Fabricius

populi (L.)—POPLAR HAWK MOTH. Very common, and very variable in colour.

NOTODONTIDAE

CLOSTERA Samouelle

pigra (Hufn.)—SMALL CHOCOLATE-TIP. Scarborough (J.H.R.).

NOTODONTA Ochsenheimer

ziczac (L.)—PEBBLE PROMINENT. Generally common.

dromedarius (L.)—IRON PROMINENT. Common.

DRYMONIA Huebner

dodonaea (Schiff.)—MARBLED BROWN. Common at Scarborough (T.W.).

ruficornis (Hufn.)—LUNAR MARBLED BROWN. Scarborough, common (T.W., A.S.).

PHEOSIA Huebner

gnoma (Fabr.)—LESSER SWALLOW PROMINENT. Common.

tremula (Clerck)—SWALLOW PROMINENT. Common.

PTEROSTOMA Germar

palpina (L.)—PALE PROMINENT. Scarborough (T.W.) ; Silpho (M.E., E.O.).

LOPHOPTERYX Stephens

capucina (L.)—COXCOMB PROMINENT. Common and generally distributed.

CERURA Schrank

vinula (L.)—PUSS MOTH. Common.

hermelina (Goeze)—POPLAR KITTEN. Seamer Moor on aspen (A.S.T.) ; Harwood Dale (M.E., E.O.).

furcula (Clerck)—SALLOW KITTEN. Fairly common and widely distributed.

bicuspis (Borkh.)—ALDER KITTEN. This used to be taken in some numbers near Scarborough by T. Wilkinson, but has not been seen for many years ; Goathland (F.O.M.).

PHALERA Huebner

bucephala (L.)—BUFF-TIP. Fairly common.

SATURNIIDAE

SATURNIA Schrank

pavonia (L.)—EMPEROR. Common on the moors.

SATYRIDAE

PARARGE Huebner

aegeria (L.)—SPECKLED WOOD. Very local ; Scarborough (T.W.), but not seen for many years ; abundant in suitable seasons at Pickering.

DIRA Huebner

megea (L.)—WALL BUTTERFLY. Local ; used to occur at Scarborough, but disappeared for many years ; has now re-appeared and has been seen or taken on Irton Moor (H.W.D.) ; in lanes near Cayton (E.O.) ; Silpho Moor (M.E.). Now common.

AGAPETES Billberg

galathea (L.)—MARBLED WHITE. Local ; used to occur at Scarborough but died out, the last specimen being taken in Raincliffe Wood, 1901 (H.W.H.) ; one specimen Cayton Bay, 1929 (G.L.M.) ; since then specimens have been taken in Falsgrave Park (T.N.R.) ; Raincliffe Wood (M.E., E.O.). Locally common on the Wolds.

EUMENIS Huebner

semele (L.)—GRAYLING. Local ; once abundant on Scarborough Castle Hill, but now extinct there. Now rapidly spreading (1947), and to be found in suitable localities on the edge of the moors from Scarborough to Pickering, also on the Wolds.

MANIOLA Schrank

tithonus (L.)—GATEKEEPER. Not common ; occasional in the Scarborough area, abundant at Pickering in suitable seasons.

jurtina (L.)—MEADOW BROWN. Common in fields everywhere.

COENONYMPHA Huebner

pamphilus (L.)—SMALL HEATH. Common in the countryside generally.

tullia (Muell., O. F.)—LARGE HEATH. Very local ; on moors near its food-plant ; Falcon Inn, Murk Mire Moss, May Moss, Upper Langdale, etc. (M.E.).

APHANTOPUS Wallengren

hyperanthus (L.)—RINGLET. Local ; once common near Scarborough, but it disappeared ; in several localities, however, of late years, Scarborough (M.E., E.O.), Wykeham, locally common at Pickering and on the Wolds.

NYMPHALIDAE

ARGYNNIS Fabricius

selene (Schiff.)—SMALL PEARL-BORDERED FRITILLARY. Locally common in the dales and on the moors. Fond of marshy ground covered with *Juncus*, on which it rests, the underside closely resembling the brown flower-heads.

euphrosyne (L.)—PEARL-BORDERED FRITILLARY. Local ; less common than *selene* ; only in the dales.

lathonia (L.)—QUEEN OF SPAIN FRITILLARY. Very rare ; a single specimen, Oliver's Mount, -/9/1868 (J.H.R.).

cydippe (L.)—HIGH BROWN FRITILLARY. Very local ; Scarborough (T.W.), no recent record. Common at Pickering ; one record from the Wolds.

paphia (L.)—SILVER-WASHED FRITILLARY. Local ; Scarborough district (J.H.R.) ; common at Pickering.

aglaja (L.)—DARK-GREEN FRITILLARY. Common near the head of most of the dales and in the Wold valleys.

VANESSA Fabricius

atalanta (L.)—RED ADMIRAL. Common, sometimes abundant, depending on immigration; occurs almost every year.

cardui (L.)—PAINTED LADY. A fairly frequent visitor, sometimes common, as in 1928, 1933 and 1945.

AGLAIS Dalman

urticae (L.)—SMALL TORTOISESHELL. Common and generally distributed.

NYMPHALIS Kluk

polychloros (L.)—LARGE TORTOISESHELL. Rare; Pickering (T.W.).

io (L.)—PEACOCK. Uncommon; at one time very rare, now a few specimens are seen every year.

antiopa (L.)—CAMBERWELL BEAUTY. Rare; Oliver's Mount, two in 1872, one in 1899 (J.H.R.), one in 1932 (G.B.W.); Beedale, one in 1897 (J.H.R.); Pickering; Scalby, 1947 (C.B.).

POLYGONIA Huebner

c-album (L.)—COMMA. Rare; recorded as abundant at Scarborough (T.W.); not seen for many years until 1942, when three specimens were seen in Peasholm Glen (G.B.H.); Pickering (A.S.); Langdale (E.O.). Now fairly common.

RIODINIDAE

HAMEARIS Huebner

lucina (L.)—DUKE OF BURGUNDY FRITILLARY. Locally common; Scarborough (E.B.); Pickering very common, Thornton-le-Dale, Langdale End (D.W.B.).

LYCAENIDAE

CUPIDO Schrank

minimus (Fuess.)—SMALL BLUE. Rare; very common at Scarborough (T.W.), but has not occurred for many years; plentiful at Pickering in the 1880's.

PLEBEIUS Linnaeus

argus L.—SILVER-STUDDED BLUE. Rare; Scarborough (T.W.), once plentiful at Pickering.

ARICIA R. L.

agestis (Schiff.)—BROWN ARGUS. Locally common; Scarborough (G.T.); very common on Haugh Rigg near Pickering, and in the Wold valleys where rock-rose is common.

POLYOMMATUS Latreille

icarus (von Rott.)—COMMON BLUE. Generally distributed and common.

CELASTRINA Tutt

argiolus (L.)—HOLLY BLUE. Rare; specimens of the spring brood have been taken at Scarborough (H.W.D.), and of the late

summer brood on Seamer Moor (E.O.) ; plentiful at Pickering ; Langdale (M.E.) ; spreading.

LYCAENA Fabricius

phlaeas (L.)—SMALL COPPER. Very common all over the district.

CALLOPHRYS Billberg

rubi (L.)—GREEN HAIRSTREAK. Common on the moors where bilberry grows, sometimes abundant.

STRYMON Huebner

w-album (Knoch)—WHITE-LETTER HAIRSTREAK. Rare ; Raincliffe Wood (T.W., H.W.H.) ; Forge Valley (H.W.H.).

PIERIDAE

PIERIS Schrank

brassicae (L.)—LARGE WHITE. Very common, in some years especially abundant. Sometimes added to by migration from the Continent, e.g., 1940.

rapae (L.)—SMALL WHITE. Very common ; pale buff forms sometimes occur in both the spring and the summer broods.

napi (L.)—GREEN-VEINED WHITE. Common, especially in woods and dales.

EUCHLOE Huebner

cardamines (L.)—ORANGE TIP. Fairly common ; apparently commoner in recent years, especially as one moves west in the district.

COLIAS Fabricius

crocea (Geoffr.)—CLOUDED YELLOW. Rare, an occasional migrant. Scarborough (T.W.) ; Flamborough Head (W.B.T.) ; Robin Hood's Bay (G.B.W.) ; Burniston Cliff (I.P.R.) ; common all over the district in 1947, when there were three broods, including the pale form **helice** (**pallida**).

GONEPTERYX Leach

rhamni L.—BRIMSTONE. Very rare ; only very few specimens have been seen here, although recorded as of general occurrence in Yorkshire (G.T.P.).

HESPERIIDAE

ERYNNIS Schrank

tages (L.)—DINGY SKIPPER. Widely distributed but local ; Scarborough, Langdale, Beast Cliff, Pickering.

THYMELICUS Huebner

sylvestris (Poda)—SMALL SKIPPER. Common near Scarborough and Pickering, in the dales, on the moors and Wolds.

HESPERIA Fabricius

comma (L.)—SILVER-SPOTTED SKIPPER. Very rare ; Scarborough (E.B., "Newman's British Butterflies"). It may possibly occur on the Wolds.

AUGIADES Huebner

[**venata** (Bremer & Grey)] s. **septentrionalis** (Ver.)—LARGE SKIPPER. Commoner than the Small Skipper.



LARVAE OF LARGE WHITE BUTTERFLY (*Pieris brassicae* (L.))
EMERGING FROM EGGS

Photograph : Vincent J. Watson, F.R.P.S.

DREPANIDAE

CILIX Leach

glauca (Scop.)—CHINESE CHARACTER. Seamer Moor, occasional at dusk (A.S.T.).

DREPANA Schrank

lacertinaria (L.)—SCALLOPED HOOK-TIP. Seamer Moor, fairly common on birches.

falcata (L.)—PEBBLE HOOK-TIP. Fairly common and generally distributed.

PHYCITIDAE

SALEBRIA Zeller

fusca (Haw.)—Common on the moors where the heather has been burnt.

DIORYCTRIA Zeller

abietella (Schiff.)—Not uncommon, Scarborough (T.W., A.S.).

EPHESTIA Guenée

kuehniella Zell.—Abundant in flour-stores.

elutella (Huebn.)—Very common.

HOMOEOSOMA Curtis

nimbella (Dup.)—Flamborough Head (E.H.) ; Scarborough in seeds of yarrow (T.W.).

nebulella (Schiff.)—Not common. Flamborough Head (E.H.) ; Scarborough (T.W.).

EURHODOPE Huebner

advenella (Zinck.)—Scarborough (T.W.).

ACROBASIS Zeller

consociella (Huebn.)—Not common, Scarborough (T.W.).

tumidella (Zinck.)—Scarborough (T.W.).

GALLERIIDAE

ACHROIA Huebner

grisella (Fabr.)—Old comb containing this moth was given me by D. W. Bevan (G.B.W.).

APHOMIA Huebner

sociella (L.)—Several at Burniston, 26/7/1937 (A.S.).

CRAMBIDAE

CRAMBUS Fabricius

hamellus (Thunb.)—Scarborough (T.W., A.S.) ; one at Pickering (A.S.).

pratellus (L.)—Common.

culmellus (L.)—Very common.

hortuellus (Huebn.)—Very common.

pinellus (L.)—Scarborough, -/7/1938 (A.S.).

margaritellus (Huebn.)—Plentiful in damp parts of the moors above Cloughton, 17/5/1939, and beyond the Falcon Inn, 17/8/1945 (A.S.).

inquinatellus (Schiff.)—Scarborough (T.W.).

tristellus (Schiff.)—Very common.
selasellus (Huebn.)—Scarborough (T.W.).

CHILO Zincken

phragmitellus (Huebn.)—Scarborough, abundant (T.W.).

PYRAUSTIDAE

NYMPHULA Schrank

nymphaeata (L.)—Scarborough (J.H.).
stagnata (Don.)—Scarborough (J.H.).
stratiotata (L.)—Scarborough, not uncommon (T.W.).

PHLYCTAENIA Huebner

crocealis (Huebn.)—Scarborough (T.W., A.S.).
lutealis (Huebn.)—Common.
ferrugalis (Huebn.)—Scarborough (T.W.).
nivealis (Fabr.)—Common.
terrealis (Treit.)—Scarborough (T.W.).
fuscalis (Schiff.)—Scarborough, plentiful (A.S.T.).

NOMOPHILA Huebner

noctuella (Schiff.)—Flamborough Head (E.H., A.S.).

PYRAUSTA Schrank

olivalis (Schiff.)—Common.

LOXOSTEGE Huebner

sticticalis (L.)—Scarborough, formerly abundant (T.W.).

SCOPARIA Haworth

resinea (Haw.)—Not common. Scarborough on ash trees (T.W.).
angustea (Steph.)—Scarborough (T.W.).
murana (Curt.)—Scarborough (T.W.).
truncicolella (Staint.)—Scarborough, fairly common (T.W.).
pallida (Steph.)—Scarborough (T.W.).
cembrae (Haw.)—Common, Scarborough (T.W., A.S.).
ambigualis (Treit.)—Very common.

MESOGRAPHE Huebner

forficalis (L.)—Common.

PYRALIDIDAE

PYRALIS Linnaeus

farinalis (L.)—Common.

AGLOSSA Latreille

pinguinalis (L.)—Common.

ALUCITIDAE

OXYPTILUS Zeller

parvidactylus (Haw.)—Scarborough (S.M.), but Mr. Porritt seems to think it a doubtful record.

PLATYPTILIA Huebner

acanthodactyla (Huebn.)—Scarborough (S.M.).
gonodactyla (Schiff.)—Fairly common among coltsfoot.
ochrodactyla (Schiff.)—Scarborough, common among tansy (T.W.).

STENOPTILIA Huebner

bipunctidactyla (Scop.)—Common ; Scarborough (S.M.) ; Langdale End (A.S.) ; Flamborough Head (E.H.).

pterodactyla (L.)—Common.

ALUCITA Linnaeus

tridactyla (L.)—Scarborough (T.W.) ; Pickering in quarry, 8/7/1941 (A.S.).

pentadactyla (L.)—Common.

ADAINA (Tutt) Meyrick

microdactyla (Huebner.)—Scarborough, plentiful among *Eupatorium cannabinum* (T.W.).

OIDAEMATOPHORUS Wallengren

osteodactylus (Zell.)—Scarborough 28/6/1912 (A.S.T., A.S.).

tephradactylus (Huebner.)—Scarborough (T.W.).

lithodactylus (Treit.)—Scarborough, very common (T.W., A.S.).

monodactylus (L.)—Common, Scarborough, Pickering (A.S.).

LASIOCAMPIDAE

LASIOCAMPA Schrank

quercus (L.)—OAK EGGAR. Abundant on the moors ; ours is the northern form *callunae* Palm.

POECILOCAMPA Stephens

populi (L.)—DECEMBER MOTH. Scarborough, common (T.W.) ; Forge Valley, Sawdon Dale (G.B.W.).

ERIOGASTER Germar

lanestris (L.)—SMALL EGGAR. Scarborough (T.W.), not now common ; Pickering (A.S.).

MACROTHYLACIA Rambur

rubi (L.)—FOX MOTH. Common on the moors and on wild places on the cliffs.

PHILUDORIA Kirby, W. F.

potatoria (L.)—DRINKER MOTH. From 1902-12 decidedly uncommon, but it has gradually increased until now it is quite common in suitable places, especially on the cliffs.

ZYGAEINIDAE

ZYGAEINA Fabricius

filipendulae (L.)—SIX-SPOT BURNET. Fairly common ; Fylinghall (A.S.T.) ; Filey, Langdale End, larvae abundant (G.B.W.) ; Flamborough (S.L.M.).

loniceræ (von Schev.)—NARROW-BORDERED FIVE-SPOT BURNET. Abundant in many places, both on the coast and inland.

PROCRIS Fabricius

geryon (Huebner.)—CISTUS FORESTER. Common on the Wolds near Wold Newton (M.E., E.O.) ; Pickering (A.S.).

statices (L.)—FORESTER. In great numbers on Flixton Carr (A.S.T.) ; common in a marshy field near Raincliffe Wood (G.B.W., G.L.M.).

COSSIDAE

COSSUS Fabricius

cossus (L.)—GOAT MOTH. Scarborough (T.W.). There has been no record for many years.

PHALONIIDAE

PHALONIA Huebner

rubigana (Treit.)—Scarborough (T.W.).

cnicana (Doubl., H.)—Scarborough (T.W.) ; Forge Valley, 1/5/1946 (A.S.).

tesserana (Schiff.)—Scarborough (T.W.) ; Pickering (A.S.).

ciliella (Huebner.)—Plentiful at Pickering in June (A.S.).

nana (Haw.)—Common.

atricapitana (Steph.)—Flamborough Head (E.H.) ; Scarborough (T.W.) ; Burniston Cliff, 21/6/1946 (A.S.).

hybridella (Huebner.)—Scarborough from seedheads of *Picris hieracioides* (T.W.) ; Pickering (A.S.).

COCHYLIS Treitschke

subbaumanniana (Wilk., S. J.)—Pickering, 6/7/1941 (A.S.).

hartmanniana (Clerck)—Langdale End, common (A.S.).

PHTHEOCHROA Stephens

sodaliana (Haw.)—Scarborough on *Hieracium* (T.W.).

maculosana (Haw.)—Forge Valley, plentiful, 5/6/1943 (A.S.).

EUXANTHIS Huebner

angustana (Huebner.)—Very common on the moors (A.S.).

straminea (Haw.)—Flamborough Head, common (E.H.).

zoëgana (L.)—Flamborough Head (E.H.) ; Scarborough, Pickering (A.S.).

hamana (L.)—Flamborough Head (E.H.).

IDIOGRAPHIS Lederer

inopiana (Haw.)—Scarborough, common among fleabane (T.W.).

TORTRICIDAE

DITULA Stephens

angustiorana (Haw.)—Common.

EPAGOGE Huebner

vulgana (Froel.)—Scarborough, Pickering, common (A.S.).

grotiana (Fabr.)—Scarborough, one specimen, 1/9/1928 (A.S.).

PHILEDONE Huebner

gerningana (Schiff.)—Common on the moors (A.S.).

CACOECIA Huebner

oporana (L.)—Common.

xylosteanana (L.)—Common.

rosana (L.)—Very common.

hebenstreitella (Muell., O. F.)—Pickering (A.S.).

lecheana (L.)—Scarborough (T.W., A.S.).

PANDEMIS Huebner

corylana (Fabr.)—Fairly common.

heparana (Schiff.)—Common.

cerasana (Huebn.)—Common.

TORTRIX Linnaeus

loefflingiana (L.)—Common.

viridana (L.)—Abundant, often defoliating oak.

paleana (Huebn.)—Flamborough Head (E.H.) ; Scarborough (T.W.) ; Pickering (A.S.).

viburnana Schiff.—Common (T.W.).

forsterana (Fabr.)—Scarborough (A.S.).

musculana Huebn.—Common.

EULIA Huebner

ministrana (L.)—Common.

pulchellana (Haw.)—Moors near Scarborough, abundant among bilberry.

TORTRICOIDES Guenée

tortricella (Huebn.)—Common.

CNEPHASIA Curtis

osseana (Scop.)—Common, Pickering (A.S.).

interjectana (Haw.)—Common.

octomaculana Curt.—Scarborough (T.W.).

incertana (Treit.)—Common.

nubilana (Huebn.)—Common.

ISOTRIAS Meyrick

trifasciana (Don.)—Common.

OLINDIA Guenée

ulmana (Huebn.)—Scarborough (A.S.).

ARGYROTOZA Stephens

bergmanniana (L.)—Common.

conwayana (Fabr.)—Common.

PERONEA Curtis

holmiana (L.)—Common.

rhombana (Schiff.)—Very common about hawthorn.

aspersana (Huebn.)—Scarborough (T.W.) ; Pickering (A.S.).

calidoniana (Steph.)—Pickering, plentiful in July and August (A.S.).

ferrugana (Schiff.)—Pickering, common (A.S.).

latifasciana (Haw.)—Common.

variegana (Schiff.)—Very common.

rufana (Schiff.)—Abundant on willow and sweet-gale (T.W.).

sparsana (Schiff.)—Common.

mixtana (Huebn.)—Scarborough, abundant on *Erica tetralix* and *E. cinerea* (T.W., A.S.).

hastiana (L.)—Scarborough (T.W.) ; Pickering (A.S.).

literana (L.)—Scarborough, common (T.W.) ; Pickering (A.S.).

boscana (Fabr.)—Flamborough Head (E.H.).

EUCOSMIDAE

SPILONOTA Stephens

ocellana (Schiff.)—Common.

EVETRIA Huebner

pinivorana (Zell.)—Scarborough, among firs (T.W.).

ANCYLIS Huebner

myrtillana Treit.—Near Scarborough on bilberry (T.W.).

unguicella (L.)—Scarborough (T.W.).

diminutana (Haw.)—Pickering (A.S.).

mitterbacheriana (Schiff.)—Langdale End (A.S.).

laetana (Fabr.)—Scarborough (T.W.) ; Pickering (A.S.).

NOTOCELIA Huebner

uddmanniana (L.)—Common.

rosaecolana Doubl.—Pickering, common (A.S.).

EUCOSMA Huebner

rheediana (Haw.)—Scarborough on honeysuckle (T.W.) ; Pickering (A.S.).

mercuriana (Froel.)—Scarborough (T.W.).

griseana (Huebner.)—Scarborough (T.W.).

myrtillana (Westw.)—Scarborough (T.W.) ; near Flask Inn (G.B.W.).

ratzeburgiana (Sax.)—Scarborough among firs (T.W.).

isertana (Fabr.)—Common.

trimaculana (Don.)—Common.

nigromaculana (Haw.)—Scarborough (T.W., A.S.).

pupillana (Clerck)—Near Scarborough, abundant about wormwood (T.W.).

cana (Haw.)—Scarborough (A.S.).

hohenwartiana (Schiff.)—Common.

pflugiana (Fabr.)—Flamborough Head (E.H.).

costipunctana (Haw.)—Common on the Wolds (A.S.).

cynosbatella (L.)—Common.

penkleriana (Fisch. von Roesl.)—Scarborough, common (T.W.).

bilunana (Haw.)—Scarborough, rather common among birches (T.W.).

crenana (Huebner.)—Scarborough, common (T.W.).

tetraquetra (Haw.)—Common.

triquetra (Haw.)—Scarborough, common (T.W.).

tedella (Clerck)—Pickering, common (A.S.).

maculana (Fabr.)—Scarborough, common among poplars (T.W., A.S.).

solandriana (L.)—Common.

semifuscana (Steph.)—Scarborough (A.S.).

BACTRA Stephens

lancealana (Huebner.)—Common.

furfurana (Haw.)—Scarborough, not common (T.W.).

POLYCHROSIS Ragonot

fuligana (Schiff.)—Scarborough (T.W.).

ENDOTHENIA Stephens

fuligana (Haw.)—Scarborough (T.W.).

ARGYROPOLOCE Huebner

semifasciana (Haw.)—Scarborough, among willows (T.W.).

lineana (Schiff.)—Scarborough (T.W.).

corticana (Schiff.)—Scarborough (T.W., A.S.).
sororculana (Zett.)—Scarborough (T.W., A.S.).
nubiferana (Haw.)—Common.
pruniana (Huebn.)—Common.
sauciana (Gey. in Huebn.)—Scarborough (T.W.).
arcuella (Clerck)—Scarborough (T.W.).
micana (Froel.)—Scarborough (T.W.).
lacunana (Schiff.)—Common.
aemulana (Huebn.)—Common.

HEMIMENE Huebner

petiverella (L.)—Pickering, common (A.S.).
acuminatana Zell.—Burniston, common on cliffs (A.S.).
plumbana (Scop.)—Pickering, very common (A.S.).

PAMMENE Huebner

splendidulana (Guen.)—Scarborough (T.W.) ; Pickering (A.S.).
argyrana (Huebn.)—Scarborough (T.W., A.S.) ; Pickering (A.S.).
spiniana (Dup.)—Scarborough, flies in the afternoon sunshine (T.W.).
populana (Fabr.)—Scarborough, larvae in shoots of willow (T.W.).
regiana (Zell.)—Scarborough, very common ; larvae feed under loose bark of sycamore (T.W.).
trauniana (Schiff.)—Scarborough (T.W.).

ENARMONIA Huebner

tenebrosana (Dup.)—Scarborough, larvae feed in rose-hips (T.W.).
funebrana (Treit.)—Scarborough, larvae feed inside plums (T.W.).
aurana (Fabr.)—Scarborough (T.W.) ; Flamborough Head (E.H.).
pomonella (L.)—Scarborough, larvae within apples (T.W.).
aspidiscana (Steph.)—Scarborough (T.W., A.S.).
succedana (Schiff.)—Scarborough, common among gorse (T.W.) ; swarms at Pickering (A.S.).
internana (Guen.)—With the preceding.
orobana (Treit.)—Bred from larvae in the pods of *Vicia sylvatica* on the cliffs to the north of Scarborough (T.W.).
dorsana (Fabr.)—Scarborough, larvae in pods of *Lathyrus tuberosus* (T.W.) ; Pickering (A.S.).
nigricana (Fabr.)—Common in pea-pods.
strobilella (L.)—Scarborough (T.W.).
coniferana (Ratz.)—Scarborough (T.W.).

GELECHIIDAE**METZNERIA** Zeller

lappella (L.)—Scarborough in seeds of burdock (T.W.).
carlinella (Staint.)—Scarborough among carline thistle (T.W.).
metzneriella (Staint.)—Scarborough, very common among knapweed (T.W., A.S.).

PSAMATHOCRITA Meyrick

osseella (Staint.)—Yedmandale and Forge Valley, freely on the wing in early June (T.W.).

ARISTOTELIA Huebner

tenebrella (Huebner.)—Scarborough, very common (T.W., J.S.);
Troutsdale, 18/6/1946 (A.S.).

pulveratella (Herr.-Schaeff.)—Scarborough (T.W.).

ericinella (Dup.)—Common on the moors.

hermannella (Fabr.)—Scarborough, larva on leaves of *Chenopodium* (T.W.).

RECURVARIA Haworth

leucatella (Clerck)—Scarborough (S.M.); Pickering (A.S.).

EXOTELEIA Wallengren

dodecella (L.)—Scarborough, larvae in shoots of Scots pine (T.W.).

XENOLECHIA Meyrick

aethiops (Westw.)—Scarborough, very common on *Calluna* (T.W.);
Pickering (A.S.).

notatella (Huebner.)—Scarborough (T.W.).

proximella (Huebner.)—Scarborough, very common (T.W.).

fugitivella (Zell.)—Scarborough, common (S.M.).

vulgella (Huebner.)—Scarborough, common (S.M.).

sequax (Haw.)—Scarborough (S.M.).

BRYOTROPHA von Heinemann

domestica (Haw.)—Scarborough (S.M.).

senectella (Zell.)—Scarborough (S.M., A.S.).

desertella (Dougl.)—Scarborough (S.M.).

terrella (Schiff.)—Common and generally distributed.

GELECHIA Huebner

diffinis (Haw.)—Scarborough, very common. Larva is found in a
burrow at root of *Rumex acetosella* (T.W., J.S.).

mulinella Zell.—Very common among gorse.

longicornis (Curt.)—Scarborough (S.M.).

betulae (Haw.)—Very common on the moors.

rhombella (Schiff.)—Scarborough, very common; larva on apple
(T.W., J.S.).

cuneatella Dougl.—Scarborough on willow (T.W.).

solutella Zell.—Scarborough (T.W.).

PLATYEDRA Meyrick

malvella (Huebner.)—Scarborough, in gardens about hollyhocks
(T.W.).

PHTHORIMAEA Meyrick

plantaginella (Staint.)—Flamborough Head (E.H.); Scarborough,
very common (T.W.).

artemisiella (Treit.)—Scarborough, very common (S.M.).

acuminatella (Sirc.)—Scarborough on thistle (T.W.).

maculea (Haw.)—Scarborough, larvae in seedheads and shoots of
Stellaria holostea (T.W.).

fraternella (Dougl.)—Scarborough, larvae in shoots of *Cerastium*
(T.W.).

viscariella (Staint.)—Scarborough about *Melandrium dioicum*, com-
mon (T.W.).

tricolorella (Haw.)—Scarborough, larva among *Stellaria holostea*, very common (S.M.).

THIOTRICA Meyrick

subocellea (Steph.)—Scarborough, abundant among *Origanum* (T.W.).

STOMOPTERYX von Heinemann

anthyllidella (Huebn.)—Scarborough, very common (S.M., A.S.).

vorticella (Scop.)—Scarborough, rather local (T.W., A.S.).

taeniolella (Zell.)—Scarborough, larvae between leaves of *Lotus* (T.W.).

ANACAMPSIS Curtis

populella (Clerck)—Scarborough (S.M., A.S.).

ACOMPSIA Huebner

cinerella (Clerck)—Scarborough (T.W., A.S.).

ANARSIA Zeller

spartiella (Schränk)—Scarborough, larvae in shoots of gorse, etc., rather local (T.W.).

HYPATIMA Huebner

conscriptella (Huebn.)—Common.

COSMOPTERIGIDAE

BLASTODACNA Wocke

hellerella (Dup.)—Scarborough, very common (T.W., A.S.).

SPULERIA Hofmann, E.

flavicaput (Haw.)—Very common (S.M.).

MOMPHA Huebner

terminella (Westw.)—Scarborough, very common on enchanter's nightshade (T.W., J.S.).

locupletella (Schiff.)—Scarborough, common on *Epilobium* (T.W.).

conturbatella (Huebn.)—Pickering (A.S.).

propinquella (Staint.)—Scarborough, very common (T.W.); Flamborough Head (E.H.).

lacteella (Steph.)—Scarborough, common (S.M.).

ochraceella (Curt)—Scarborough, very common, larvae in roots and stems of *Epilobium* (T.W., J.S.).

miscella (Schiff.)—Scarborough, larva in leaves of *Helianthemum* (T.W.).

BATRACHEDRA Herrich-Schaeffer

praeangusta (Haw.)—Scarborough, very common among willows (T.W.).

OECOPHORIDAE

OECOPHORA Latreille

geoffrella (L.)—Scarborough, very common (S.M., A.S.).

ESPERIA Huebner

sulphurella (Fabr.)—Common.

ENDROSIS Huebner

sarcitrella (L.)—Very common in houses.

AMPHISBATIS Zeller

incongruella (Staint.)—Common on the moors (T.W.).

BORKHAUSENIA Huebner

fuscescens (Haw.)—Scarborough (T.W.).

subaquilella (Staint.)—Scarborough (T.W.).

minutella (L.)—Scarborough (S.M.).

flavifrontella (Schiff.)—Scarborough (T.W.).

pseudospretella (Staint.)—A pest in houses and in insect collections.

DIURNEA Haworth

fagella (Schiff.)—Very common, variable in colour with a large number of melanic specimens.

phryganella (Huebner.)—Scarborough, common (S.M.).

PLEUROTA Huebner

bicostella (Clerck)—Very common on the moors (T.W., J.S.).

EXAERETIA Stainton

allisella Staint.—Scarborough (T.W.).

DEPRESSARIA Haworth

apiella (Huebner.)—Scarborough (S.M.).

heracliana (L.)—Abundant on hogweed.

pulcherrimella Staint.—Scarborough among *Conopodium majus* (T.W.).

albipunctella (Huebner.)—Scarborough, larvae on wild carrot (S.M.).

ultimella Staint.—Scarborough (S.M.).

costosa Haw.—Scarborough, very common among gorse (S.M., A.S.).

umbellana Haw.—Very common among gorse (S.M.).

liturella (Schiff.)—Common.

pallorella Zell.—Scarborough (S.M.).

assimilella (Treit.)—Scarborough among broom (S.M.).

subpropinquella Staint.—Scarborough, common among thistles (S.M., A.S.).

arenella (Schiff.)—Scarborough among knapweed and thistles (S.M.).

propinquella (Treit.)—Scarborough among thistles (T.W.).

carduella (Huebner.)—Scarborough among thistles (T.W.).

angelicella (Huebner.)—Scarborough, very common among *Angelica sylvestris* (S.M., A.S.).

rotundella Dougl.—Pickering, one specimen 20/8/1941 (A.S.).

ciliella Staint.—Scarborough, very common among *Angelica* (S.M.).

applanata (Fabr.)—Very common.

alstromeriana (Clerck)—Scarborough, very common (S.M.).

ocellana (Fabr.)—Scarborough, very common among willows (S.M.); Hayburn Wyke, Forge Valley (G.T.P.).

hypericella (Huebner.)—Scarborough, larvae in screwed-up tops of *Hypericum* (T.W.).

SEMIOSCOPIA Huebner

steinkellneriana (Schiff.)—Scarborough, abundant on hawthorn and mountain ash (T.W.).

avellanella (Huebner.)—Scarborough (S.M.).

ORNEODIDAE

ORNEODES Latreille

hexadactyla (L.)—Scarborough, larvae in flowers of honeysuckle, common (G.B.W., A.S.).

SESIIDAE

AEGERIA Fabricius

tipuliformis (Clerck)—Occasional.

DIPSOSPHECIA Spuler

scopigera (Scop.)—Scarborough (T.W.) ; Burniston, one specimen at rest on poplar, -/7/1939 (I.P.R.).

SPHECIA Huebner

bembeciformis (Huebner.)—Scarborough, not uncommon where there are poplars.

SCHRECKENSTEINIIDAE

PANCALIA Curtis

leuwenhoekella (L.)—Pickering, plentiful (A.S.).

SCHRECKENSTEINIA Huebner

festaliella (Huebner.)—Scarborough among bramble and raspberry (T.W.) ; Forge Valley, 7/6/1929 (A.S.).

GLYPHIPTERIGIDAE

ANTHOPHILA Haworth

fabriciana (L.)—Common wherever nettles occur.

GLYPHIPTERIX Huebner

fuscoviridella (Haw.)—Scarborough, very common (S.M., A.S.).

thrasonella (Scop.)—Scarborough, very common (S.M., A.S.).

cramerella (Fabr.)—Scarborough, very common (T.W., J.S.) ; very plentiful on the Wolds (A.S.).

equitella (Scop.)—Scarborough among *Sedum acre* (T.W.).

haworthana (Steph.)—Scarborough, very common in seed-heads of *Eriophorum* (T.W.).

ELACHISTIDAE

ELACHISTA Treitschke

trapeziella Staint.—Scarborough among *Luzula pilosa* (T.W.).

cinereopunctella (Haw.)—Scarborough, very common among *Carex flacca* (T.W.).

gleichenella (Fabr.)—Scarborough, larvae plentiful on *Luzula pilosa* (T.W.).

albifrontella (Huebner.)—Scarborough, very common (S.M.) ; Flamborough Head (E.H.).

luticomella Zell.—Scarborough (T.W.) ; Flamborough Head, larvae on *Dactylis glomerata* (E.H.).

atricomella Staint.—Scarborough, about *Dactylis glomerata* (T.W.).

kilmunella Staint.—Scarborough among *Carex* (T.W.).

perplexella Staint.—Scarborough, larvae in leaves of *Deschampsia caespitosa* (T.W.).

subnigrella Dougl.—Scarborough, common (S.M.).

- stabilella* Frey, H.—Scarborough (T.W.).
nigrella (Haw.)—Scarborough, very common (S.M.).
bedellella (Sirc.)—Scarborough, common (T.W.).
obs curella Staint.—Scarborough, common (S.M.).
taeniatella Staint.—Scarborough, plentiful on *Brachypodium sylvaticum* (T.W.).
megerlella (Huebner.)—Scarborough, very common (S.M.).
serricornis Staint.—Scarborough (T.W.).
biatomella (Staint.)—Scarborough on *Carex flacca* (T.W.).
eleochariella Staint.—Scarborough on *Eriophorum* (T.W.).
albidella von Tengstr.—Scarborough, very common (S.M.).
cerusella (Huebner.)—Scarborough (T.W.), plentiful (A.S.).
subocellea (Steph.)—Scarborough, larvae on leaves of *Brachypodium sylvaticum*, very common (T.W.).
triatomea (Haw.)—Scarborough, common about *Festuca* (T.W.); Flamborough Head (E.H.).
rufocinerea (Haw.)—Abundant among grass.
argentella (Clerck)—Abundant.

SCYTHRIDAE

SCYTHRIS Huebner

- senescens* (Staint.)—Scarborough among *Thymus* (T.W.).

YPONOMEUTIDAE

CEDESTIS Zeller

- farinatella* (Zell.)—Scarborough, among firs (T.W.), common (A.S.).

ZELLERIA Stainton

- hepariella* Staint.—Scarborough (T.W.).

SWAMMERDAMIA Huebner

- combinella* (Huebner.)—Scarborough, very common (S.M.); Pickering and Burniston (A.S.).

- heroldella* Huebner.—Scarborough, very common (S.M.).

- lutarea* (Haw.)—Scarborough (S.M.).

- spiniella* (Huebner.)—Scarborough (S.M.).

- pyrella* (de Vill., C. J.)—Scarborough (S.M.).

PRAYS Huebner

- curtisellus* (Don.)—Scarborough, very common (S.M.).

YPONOMEUTA Latreille

- padella* (L.)—Scarborough, common, sometimes abundant at the Mere.

- cognatella* Huebner.—Scarborough, common (S.M.).

COLEOPHORIDAE

COLEOPHORA Huebner

- spissicornis* (Haw.)—Scarborough (S.M.).

- albitarsella* Zell.—Scarborough, larvae on ground ivy, etc., (T.W.).

- alcyonipennella* (Koll.)—Scarborough, very common among *Centaurea nigra* (T.W., J.S.).

- paripennella* Zell.—Scarborough on birch (T.W.).

- nigricella* (Steph.)—Common.

- siccifolia* Staint.—Scarborough on whitethorn (T.W.).
gryphipennella (Bouché)—Scarborough, larvae in leaves of roses, very common (T.W., J.S.).
orbitella Zell.—Scarborough, larvae on birch (T.W.).
viminetella Zell.—Scarborough, larvae on willow, very common (T.W.).
fuscedinella Zell.—Scarborough, very common (S.M.).
lutipennella (Zell.)—Scarborough among oaks (T.W.).
badiipennella (Dup.)—Scarborough (S.M.).
olivaceella Staint.—Scarborough (T.W.).
laricella (Huebn.)—Very common on larch (G.B.W.).
juncicolella Staint.—Scarborough, larvae on *Calluna* and *Erica*, common (H.T.S.).
chalcogrammella Zell.—Scarborough, larvae on *Cerastium arvense* in May (T.W.) ; Pickering, 21/6/1942 (A.S.).
lixella Zell.—Scarborough, larvae on grasses (T.W.).
anatipennella (Huebn.)—Scarborough (T.W.).
pyrrhulipennella Zell.—Abundant on the moors.
genistae Staint.—Larvae on *Genista anglica*, common where this occurs in the Scarborough district (S.M.).
discordella Zell.—Scarborough, very common (T.W., J.S.) ; Flamborough Head, larvae on *Lotus* (E.H.).
albicosta (Haw.)—Scarborough among gorse (T.W.) ; Pickering, 4/6/1939 (A.S.).
lineolea (Haw.)—Scarborough (A.S.).
troglodytella (Dup.)—Scarborough, larvae on leaves of *Eupatorium cannabinum*, very common (P.I., J.S.).
virgaureae Staint.—Scarborough, larvae on seeds of *Solidago*, very common (T.W., J.S.).
annulatella von Tengstr.—Scarborough, very common (S.M.).
leucapennis (Haw.)—Scarborough, larvae on seeds of *Luzula* (T.W.).
caespitiella Zell.—Abundant wherever *Juncus* grows.

GRACILLARIIDAE

LITHOCOLLETIS Huebner

- roboris* Zell.—Scarborough, larvae in large mines in oak leaves (T.W., A.S.).
harrisella (L.)—Scarborough, very common among oaks (S.M.).
heegeriella Zell.—Scarborough among oaks (T.W.).
messaniella Zell.—Scarborough among oaks (S.M.).
quercifoliella Zell.—Scarborough, very common (S.M.).
rajella (L.)—Scarborough, very common among alders (S.M.).
corvli von Nic.—Scarborough, larvae in hazel leaves, very common (S.M.).
faginella Zell.—Scarborough among beech (S.M.).
spinirolella Zell.—Scarborough among blackthorn (T.W.).
ulmifoliella (Huebn.)—Scarborough among birch, very common (S.M.).

- inrescentella* Log.—Scarborough (T.W.).
insignitella Zell.—Scarborough, common on *Trifolium medium* (T.W.).
lautella Zell.—Scarborough, larvae in oak leaves (T.W.).
schreberella (Fabr.)—Scarborough among elm (T.W.).
trifasciella (Haw.)—Scarborough, among honeysuckle (T.W.).
emberizaepennella (Bouch.)—Scarborough (T.W.).
tristrigella (Haw.)—Scarborough among elm (S.M., A.S.).
stettinensis von Nic.—Scarborough among alder, very common (T.W.).
froelichiella Zell.—Scarborough among alder (T.W.).
nicellii Staint.—Scarborough among hazel (T.W.).
klemannella (Fabr.)—Scarborough (S.M.).
viminiella (Staint.)—Scarborough among willow, very common (S.M.).
corylifoliella (Haw.)—Scarborough among hawthorn (P.I.).
muelleriella Zell.—Scarborough (T.W.).
acerifoliella Zell.—Scarborough among maple, very common (T.W.).

ORNIX Treitschke

- guttea* (Haw.)—Very common Scarborough (S.M.).
loganella Staint.—Very common, Scarborough (T.W.).
anglicella Staint.—Very common, Scarborough (S.M.).
devoniella Staint.—Very common, Scarborough (S.M.).
torquillella Zell.—Scarborough (T.W.).
scoticella Staint.—Scarborough (T.W.).

GRACILLARIA Haworth

- auroguttella* (Steph.)—Scarborough among *Hypericum* (T.W.).
syringella (Fabr.)—Very common among lilac, ash and privet.
sulphurella (Haw.)—Scarborough (T.W.); Pickering, common (A.S.).
tringipennella Zell.—Scarborough among plantain (T.W.); Burniston (A.S.).
elongella (L.)—Scarborough among alder, very common (S.M.).
 Mr. A. Smith has two Scarborough specimens which are probably to be referred to *falconipennella* Brown (Proc. S. London Ent. and Nat. Hist. Soc., 1946-47).
alchimiella (Scop.)—Scarborough among oak, very common (P.I., A.S.); Forge Valley, Pickering (A.S.).
stigmatella (Fabr.)—Scarborough among poplars and willows (T.W.).
semifascia Haw.—Scarborough, common on maple.

EPERMENIIDAE

CATAPLECTICA Walsingham

- fulviguttella* (Zell.)—Scarborough among *Angelica sylvestris* (P.I.).

EPERMENIA Huebner

- chaerophyllella* (Goeze)—Scarborough (T.W.).

PLUTELLIDAE

ORTHOTAELIA Stephens

- sparganella* (Thunb.)—Scarborough, larvae in stems of *Sparganium erectum* (T.W.).

YPSOLOPHUS Fabricius

- xylostellus* (L.)—Common among honeysuckle.
nemorellus (L.)—Scarborough among honeysuckle (T.W., A.S.).
scabrellus (L.)—Scarborough, larvae on apple (S.M.).
sylvellus (L.)—Scarborough among oak (S.M.).
parenthesellus (L.)—Scarborough on sallow (T.W.) ; common on the Wolds (A.S.).
ustellus (Clerck)—Scarborough, very common (S.M.).
sequellus (Clerck)—Scarborough (S.M., A.S.).
vittellus (L.)—Scarborough, very common (S.M.).

PLUTELLA Schrank

- porrectella* (L.)—Scarborough (S.M., A.S.).
maculipennis (Curt.)—DIAMOND-BACKED MOTH. Common, at times abundant, when it does great damage to cabbages, etc.
dalella Staint.—Scarborough (T.W.).

SUBEIDOPHASIA Weber, P.

- annulatella* (Curt.)—Scarborough (T.W.) ; Flamborough Head (E.H.).

ACROLEPIA Curtis

- granitella* (Treit.)—Scarborough, larvae in leaves of *Pulicaria dysenterica* (T.W.).

OCNEROSTOMA Zeller

- piniariella* Zell.—Scarborough among pines (T.W., A.S.).

ARGYRESTHIA Huebner

- brockeëlla* (Huebner.)—Scarborough, very common (S.M., A.S.).
goedartella (L.)—Scarborough, very common (S.M.).
pygmaeëlla (Huebner.)—Scarborough among sallow (T.W., A.S.).
sorbiella (Treit.)—Scarborough (S.M.).
cornella (Fabr.)—Scarborough among apple (S.M.).
retinella Zell.—Scarborough among birch (T.W., A.S.).
semifusca (Haw.)—Scarborough, larvae in ash and sloe (S.M., A.S.).
conjugella Zell.—Scarborough, larvae in fruit of mountain-ash, very common (T.W., J.S., A.S.).
spiniella Zell.—Scarborough, larvae in young stem of mountain-ash (T.W., A.S.).
pruniella (Clerck)—Scarborough (S.M.).
curvella (L.)—Scarborough, very common.
albistria (Haw.)—Scarborough, very common.
semitestacella (Curt.)—Scarborough (S.M., A.S.).

LYONETIIDAE**OPOSTEGA** Zeller

- crepusculella* Zell.—Scarborough, very common (S.M.).

LEUCOPTERA Huebner

- laburnella* (Staint.)—Abundant wherever laburnum grows.
spartifoliella (Huebner.)—Scarborough, common among broom (T.W.).
orobi (Staint.)—Scarborough, larvae in leaves of *Lathyrus tuberosus* (T.W.).

- lotella* (Staint.)—Cloughton Moor, abundant on *Lo'us tenuis* (T.W.).
scitella (Zell.)—Scarborough among hawthorn (S.M.).
- LYONETIA** Huebner
clerckella (L.)—Scarborough, very common (S.M.).
- TISCHERIA** Zeller
complanella (Huebner.)—Scarborough, larvae in oak leaves, very common.
marginella (Haw.)—Scarborough, larvae in leaves of bramble (S.M.).
- BUCCULATRIX** Zeller
crisatella (Zell.)—Scarborough, common on yarrow (T.W.).
nigricomella (Zell.)—Scarborough, very common among ox-eye (T.W.).
cidarella (Zell.)—Scarborough among alder (T.W.).
crataegi (Zell.)—Scarborough among hawthorn (S.M.).
demaryella (Staint.)—Scarborough among birch (T.W.).
- OINOPHILA** Stephens
v-flava (Haw.)—Scarborough, common in wine-vaults (T.W.).

TINAEIDAE

- TRICHOPHAGA** Ragonot
tapetzella (L.)—Very common.
- TINEOLA** Herrich-Schaeffer
bisselliella (Humm.)—Abundant, a great pest.
- TINAEA** Geoffroy
fulvimitrella Sod.—Scarborough (T.W.).
arcella Fabr.—Scarborough, common (T.W.).
granella (L.)—Scarborough (S.M.).
cloacella Haw.—Common.
ruvicolella Staint.—May occur with us as Mr. A. Smith has found it nearer York.
fuscipunctella Haw.—Common.
pellionella (L.)—Common everywhere.
pallescentella Staint.—Common in warehouses.
ganomella Treit.—Very common.
semifulvella Haw.—Flamborough (E.H.) ; Scarborough (T.W., A.S.).
- OCHSENHEIMERIA** Huebner
mediopectinella (Haw.)—Common.
- TALEPORIA** Huebner
tubulosa (Retz.)—Scarborough, abundant on sycamore trunks (T.W.).

LAMPRONIIDAE

- PHYLLOPORIA** von Heinemann
bistrigella (Haw.)—Scarborough, larvae in leaves of birch, very common (T.W., A.S.).
- INCURVARIA** Haworth
masculella (Fabr.)—Scarborough, very common.
- LAMPRONIA** Stephens
capitella (Clerck)—Scarborough (S.M.).

oehlmanniella (Treit.)—Scarborough (T.W.).

praelatella (Schiff.)—Scarborough (T.W.); Forge Valley, 21/6/1936 (A.S.).

luzella (Huebner.)—Scarborough (T.W.).

rubella (Bjerk.)—Scarborough, very common (S.M.); Forge Valley (A.S.).

ADELIDAE

NEMOPHORA Hofmannsegg

cupriacella (Huebner.)—Scarborough about scabious (T.W.).

degeerella (L.)—Scarborough (A.S.).

ADELA Latreille

reaumurella (L.)—Very common and widely distributed.

croesella (Scop.)—Scarborough (T.W.).

rufimitrella (Scop.)—Scarborough (T.W.).

fibulella (Schiff.)—Scarborough on germander speedwell (T.W.); common on the Wolds (A.S.).

NEMATOPOGON Zeller

swammerdammella (L.)—Scarborough, very common (S.M., A.S.).

panzeriella (Fabr.)—Scarborough (T.W.).

pilella (Fabr.)—Scarborough (T.W.).

metaxella (Huebner.)—Scarborough on marshy ground (S.M.).

HELIOZELIDAE

HELIOZELA Herrich-Schaeffer

sericiella (Haw.)—Scarborough, very common (S.M., A.S.).

resplendella (Staint.)—Scarborough, larvae inside alder leaves, very common (T.W.).

ANTISPILA Huebner

pfeifferella (Huebner.)—Scarborough, larvae in leaves of dogwood (T.W.).

treitschkiella (Fisch. von Roesl.)—Scarborough, larvae in leaves of dogwood (T.A.).

STIGMELLIDAE

STIGMELLA Schrank

pomella (Vaugh.)—Scarborough on crab-apple (T.W.).

pygmaella (Haw.)—Scarborough among hawthorn, very common (T.W.).

atricapitella (Haw.)—Scarborough, larvae in galleries in oak leaves, very common (S.M.).

ruficapitella (Haw.)—Common and generally distributed.

anomalella (Goeze)—Scarborough among roses, very common (T.W.).

oxyacanthella (Staint.)—Scarborough, very common (S.M.).

regiella (Herr.-Schaeff.)—Scarborough (T.W.).

aurella (Fabr.)—Scarborough among bramble, very common (S.M.).

hybnerella (Huebner.)—Scarborough (T.W.).

alnetella (Staint.)—Scarborough among alders (T.W.).

microtheriella (Staint.)—Scarborough among hazels, very common (T.W.).

- plagicolella* (Staint.)—Scarborough, very common (J.S.).
ignobilella (Staint.)—Scarborough among hawthorn (T.W.).
glutinosae (Staint.)—Scarborough, larvae in alder leaves (T.W.).
luteella (Staint.)—Scarborough, among birch (T.W.).
argentipedella (Zell.)—Scarborough, very common (T.W.).
basalella (Herr.-Schaeff.)—Scarborough, very common (S.M.).
malella (Staint.)—Scarborough on crab-apple (R.H.).
angulifasciella (Staint.)—Scarborough among wild-rose, common (T.W.).
arcuatella (Herr.-Schaeff.)—Scarborough among strawberry, common (T.W.).
myrtillella (Staint.)—Scarborough among bilberry, very common (T.W.).
salicis (Staint.)—Scarborough among willow, very common (T.W.).
floslactella (Haw.)—Scarborough among hazel, very common (T.W.).
lapponica (Wocke)—Scarborough, larvae in mines in birch leaves (T.W.).
septembrella (Staint.)—Scarborough among *Hypericum* (T.W.).
catharticella (Staint.)—Scarborough among buckthorn (T.W.).
weaveri (Staint.)—Scarborough about whortleberry, common (T.W.).
trimaculella (Haw.)—Scarborough (T.W.).
subbimaculella (Haw.)—Scarborough among oak (T.W.).
cryptella (Staint.)—Scarborough among bird's-foot trefoil (T.W.).
pulverosella (Staint.)—Scarborough among crab-apple, common (T.W.).

TRIFURCULA Zeller

- immundella* (Zell.)—Scarborough among broom, common (T.W.).

SCOLIAULA Meyrick

- quadrimaculella* (Boh.)—Scarborough among alder in July (T.W.).

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| Ermine | 152 | Cream Wave | 160 | |
| Tip | 169 | Crimson Speckled | | |
| | | 151 | | |
| | | | Rustic | 153 |

Forester	175	Holly Blue	171	Magpie	166
Fourspotted		Hummingbird		White	170
Footman	151	Hawk	168	Mallow	164
Fox	175			Map-winged Swift	151
Foxglove Pug	161	Ingrailed Clay	156	Marbled Beauty	153
Frosted Green	168	Iron Prominent	169	Brown	169
Orange	153			Carpet	163
		July Highflyer	163	Coronet	158
Galium Carpet	162	Knot Grass	153	Minor	154
Garden Carpet	164	Larch Pug	161	March	165
Dart	154	Large Elephant		Marsh Pug	162
Tiger	152	Hawk	168	May Highflyer	163
Gatekeeper	170	Emerald	161	Meadow Brown	170
Ghost Swift	151	Heath	170	Merveille du Jour	157
Glaucous Shears	158	Marbled Tortrix	152	Middle-barred	154
Goat	176	Ranunculus	157	Minor	154
Gold Spangle	159	Skipper	172	Miller	152
Spot	160	Tortoiseshell	171	Minor Shoulder-	158
Swift	151	Wainscot	153	knot	
Golden Plusia	160	White	172	Mother Shipton	159
-red Brindle	157	Yellow		Mottled Beauty	165
Rod Pug	162	Underwing	156	Grey	164
Gothic	156	Latticed Heath	165	Rustic	153
Grass Emerald	161	Lead Belle	164	Umber	166
Rivulet	163	-coloured Drab	158	Mouse	153
Wave	166	-coloured Pug	162	Mullein	157
Grayling	170	Least Black		Muslin	152
Great Brocade	156	Arches	152	Footman	151
Green Arches	156	Lesser Broad-			
Brindled		border	156	Narrow-bordered	
Crescent	157	Cream Wave	161	Five-spot	
Carpet	164	Lutestring	168	Burnet	175
Pug Hairstreak	172	Satin	167	-winged Pug	162
Silver-lines	152	Swallow		Neglected	155
-veined White	172	Prominent	169	Netted Pug	161
Grey Arches	159	Yellow		Northern Spinach	162
Birch	165	Underwing	156	November	164
Chi	157	Light Arches	154	Nut-tree Tussock	153
Dagger	153	Emerald	167		
Mountain		Knot Grass	153		
Carpet	163	Orange Under-	165		
Pine Carpet	162	wing			
Pug	161	Lime-speck Pug	161		
Scalloped Bar	166	Ling Pug	161	Oak Beauty	166
		Lilac Beauty	167	Eggar	175
Haworth's Minor	154	Little Emerald	161	-tree Pug	162
Heart & Club	155	Lunar Marbled-		Ochrous Pug	162
& Dart	155	brown	168	Old Lady	153
Heath Rustic	155	Thorn	167	Oleander Hawk	168
Hebrew		Underwing	156		
Character	158	Lychnis	158	Orange Sallow	156
High Brown		Lyme Grass	153	Swift	151
Fritillary	170			Tip	172
				Underwing	165

Painted Lady 171	Round-winged	Small Angle-	Striped Hawk 168
Pale Brindled	Footman 151	shades 154	Twin-spot
Beauty 166	Wave 166	Argent & Sable	Carpet 164
Mottled	Ruby Tiger 151	162	Wainscot 158
Willow 153	Ruddy Highflyer	Autumn Carpet	Suspected 157
Prominent 169	163	164	Swallowtail 166
Shouldered	Rustic 153	Black Arches	Swallow
Brocade 159	Shoulder-knot	152	Prominent 169
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Peach Blossom 167	Sallow 157	Blue 171	
Peacock 171	Kitten 169	Brindled	Tawny-barred
Pearl-bordered	Sandy Carpet 163	Beauty 166	Angle 165
Fritillary 170	Satellite 157	Copper 172	Shears 158
Pearly Underwing	Satyr Pug 161	Clouded	Speckled Pug
155	Scallop Shell 162	Brindle 154	161
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173	167	169	Treble-bar 162
Prominent 169	Hook-tip 173	Dotted Buff 154	-lines 154
Peppered 166	Oak 167	Eggar 175	Triple-spotted
Phoenix 162	Scarce Bordered	Elephant Hawk	Pug 162
Pine Beauty 158	Straw 154	168	True Lovers
Carpet 162	Footman 151	Engraved 165	Knot 155
Pink-barred	Silver-Y 160	Fanfoot 159	Turnip 155
Sallow 157	Umber 166	Heath 170	Twin-spot Carpet
Pinion-streaked	Scorched Carpet	Pearl-bordered	164
Snout 159	166	Fritillary 170	Twin-spotted
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Kitten 169	Seraphim 161	Quaker 158	Vapourer 160
Lutestring 167	Setaceous Hebrew	Rivulet 163	V-Moth 165
Powdered Quaker	Character 155	Skipper 172	V-Pug 161
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Privet Hawk 168	164	Tortoiseshell 153	Wall 170
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Clay 156	Shark 157	White 172	Waved Umber 165
Puss 169	Shears 158	White Wave 164	Wavy Carpet 164
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Carpet 164	Silver-ground	Wave 160	-marked 156
Chestnut 156	Carpet 164	Snout 159	-pinioned
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163	Skipper 172	169	satin 160
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-necked	168	Spinach 162	Winter 164
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Reddish Light	Fritillary 170	Square-spot Dart	Yellow-barred
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Minor 154	154	Streamer 163	Shell 163
Rustic 154	Pug 162		-tail 160

Order COLEOPTERA — BEETLES

G. B. Walsh

Robert Lawson, the first Scarborough coleopterist, was contemporaneous with T. Wilkinson, the well-known lepidopterist and was said by E. C. Rye to be the first beetle-collector in Europe. Some years after he died, the study of local beetles, especially of the water-beetles, was taken up, at the beginning of the century, by the Rev. W. C. Hey, West Ayton, and at Scarborough by E. C. Horrell and W. Pearson. The work was then continued at Scarborough by A. E. Winter and G. B. Walsh; at Whitby by H. Britten; and at Robin Hood's Bay by J. M. Brown. There are numerous records by visiting coleopterists, so that we have a good idea of the distribution of the Coleoptera in the north and central part of our area, though much still remains to be done in the south.

The district is a rich one for beetles, and lacks only high mountains, a river estuary and coast sand-dunes. Areas of special interest are the coast and moors, both of which have a characteristic beetle fauna. The subject of distribution of moorland insects has been discussed in the introduction to the Lepidoptera; among the Coleoptera, too, most moorland species are fairly common at least, and practically all the species are widely distributed.

There is a very interesting area of wind-blown sand between Flixton and Ganton. On it occur some species which we usually associate with the coast, notably **Broscus cephalotes** and **Notoxus monoceros**.

The district contains beetles of extremely localised distribution; e.g., **Chaetocnema conducta**, taken on two widely separated occasions in Forge Valley, its only known British habitat; **Mesites tardii**, a beetle of Lusitanian origin, occurs only at Hayburn Wyke and in one restricted locality near Robin Hood's Bay, the only known Yorkshire haunts; **Anoplus roboris** used to occur only on a single alder in Hayburn Wyke, but the insects were washed out to sea in a summer flood; and just outside our area occurs **Bledius dissimilis**, in a sandy layer some distance up the cliffs in a short stretch just south of Bridlington, again the only known British locality.

As among the Lepidoptera, it should be noted that in Lawson's records, "Scarborough" refers to the district within reach of the town. One feels, too, that the term "common" has, in some cases at any rate, been applied possibly to species which were common for only a limited time.

There are, of course, fundamental differences in the structure of the wings of the Lepidoptera and of the Coleoptera. In the former the four wings are almost always covered with highly pigmented scales which give

them their colouring and are more or less capable of degrees of pigmentation ; in the latter the forewings are almost always modified to form hard chitinous coverings (elytra) which are in various degrees closely adpressed to the sides of the abdomen and protect the true organs of flight beneath, which are neither scaled nor horny.

These elytra are heavily pigmented within and have a degree of colour stability which is not readily affected by external conditions. Just as in a good many moths there are a few beetles which exhibit degrees of increased pigmentation (melanism or melanochroism) which it seems difficult to explain in any way in terms of different external conditions. *Nebria livida* for instance, which lives at the base of clay cliffs, is black with yellow margins, but very occasionally is completely dark or, on the other hand, completely yellow ; these are almost certainly mutations which it is unnecessary to explain in general terms. We are on different ground, however, with *Orsodacne cerasi* which occurs in small numbers on hogweed flowers in Forge Valley ; this has a black form (*glabrata*) which is usually a somewhat undersized male but may be a female of normal size. Similarly on moors there is the very common " heather beetle " (*Lochmaea suturalis*) which at times is so abundant as to be a pest ; it also has a black form (*nigrita*). On the other hand we have beetles with diminished pigmentation where species which are normally black become dark reddish, a condition which the late W. E. Sharp paradoxically termed " a condition of permanent immaturity ", examples are *Aphodius ater* common everywhere and *Nebria gyllenhali* which is black in the shingle beds of the Derwent, but reddish on the dry uplands of Langdale Rigg. One is naturally tempted to explain this in terms of altitude only to be met by the exactly opposite case where *Calathus melanocephalus* with a red thorax at low altitudes has a black one above the 2000 ft. line.

Up to the present, then, we have no generally accepted theory which will explain these different forms in terms of external conditions—a state of affairs which, while disappointing in a way, is nevertheless decidedly stimulating to hypothesis and discussion.

Winter flight.

A good many beetles are in the larval state during late July, August and September and when they emerge in late September or in October they very quickly search for winter quarters where they may stay until the following spring or summer. If, however, there are heavy floods in the winter they may be washed out of these hibernacula and so be swept down-stream in flood-refuse. Moreover, many species are in very incomplete hibernation, and while they stay torpid in very cold weather, they emerge when the temperature rises a little. This particularly applies to a number of small carrion-feeding beetles which, together with certain flies of similar food habits, are on the wing on the warmer days searching for their food. The larger ones seem to remain torpid all through the cold weather, even *Necrophorus vespilloides* (= *mortuorum*) which can be found in rotten fungi late into November.

Is our beetle fauna stable?

An ever-interesting problem in the study of field natural history is the question of the stability of a fauna or flora. It is probably easier to give an answer in such cases as the flowering plants and the birds, and some information on the matter can be found in the introductions to these sections. In the case of the beetles, it is more difficult to say, for the problem is complicated by the introduction of new methods of collecting, new methods of diagnosis of species and even by the predilections of collectors with favourite haunts, etc. There are at least three aspects of the subject to be studied :—

1. **GEOLOGICAL HISTORY.** Our knowledge of the local Coleoptera extends back for only about a century, far too short a time to include any major geological changes. It is probably on the coast that these are most obvious, where we have isolated colonies of species which prefer a special type of habitat :—

- a. *Nebria livida* prefers crevices at the base of clay cliffs, and occurs at Scarborough, Gristhorpe Bay and Filey.
- b. *Micralymma marinum*, *Aepus marinus*, *Aepopsis robinii* which live between layers of shaly rock, exposed at low tide ; these may be found at Robin Hood's Bay, Scarborough and Gristhorpe Bay.

These species do not fly and their occurrence in these "pockets" is best explained on the theory that in the post-glacial period the land extended far into the North Sea and there was thus a continuity of suitable natural habitats and thus a continuity of distribution; as the land sank, many of the habitats became untenable and the beetles are thus left in what are still suitable localities.

2. **THE INFLUENCE OF MAN.** Until quite recent times there has been little interference by man with the general character of the countryside. In the immediate neighbourhood of Scarborough, there have been great changes along the coast and, owing to the building of the Marine Drive and the construction of the bungalows, etc., in the North Bay, the haunts of *Nebria livida* which used to occur there have been destroyed; but the rocks are unchanged and *Micralymma*, etc., still occurs in the crevices in the North Bay between the horizontal strata.

There are two interesting examples of discontinuous distribution in the occurrence of *Anoplus roboris* at Hayburn Wyke and of *Mesites tardii* at Hayburn Wyke and Robin Hood's Bay. When Yorkshire was largely covered with forest land these beetles were probably more widespread than they are to-day but with the destruction of most of the suitable timber, the haunts of the beetles were destroyed and we are thus left with these isolated surviving colonies. The restriction of a local strain of beetles to a single tree, as in the case of *Anoplus roboris* (v.s.), is by no means an isolated phenomenon and is perhaps to be explained on the hypothesis that this race has severely restricted physiological idiosyncrasies which were satisfied by this one particular tree.

The most profound changes in the district are associated with the moorland. The surface covering is being broken up, and the land is being drained and stripped of its heather covering, so that "Blackamoor" as known and loved by we older naturalists is rapidly disappearing. Afforestation, too, is greatly altering the moorland, replacing the callunetum with dense forests of conifers, mainly of exotic species such as Sitka Spruce and Japanese Larch. As to the probable results of these changes, one can generalise only by seeing what has happened at Ringing Keld Bog and similar localities: beetles which depend for their very existence on certain special types of habitat, such as peat bogs, peaty pools, sphagnum and the special moorland plants are almost completely wiped out and survive only in a few specially favoured localities and in Nature Reserves such as that on Slipho Moor. Of course, beetles which depend upon native conifers will increase in numbers and we can already see this in the repeated occurrence of such beetles as *Asemum striatum*, *Pissodes pini*, *P. castaneus*. It will be interesting to note, too, whether insects strictly associated with the foreign conifers ever make their appearance in the district and whether any native beetles ever adopt these new plants as their normal pabulum.

3. CHANGE OF CLIMATE. This would seem to be the most interesting of all the factors which can change the beetle fauna and the most difficult to claim as an undoubted cause of such change. Observations of such global changes as the diminution in size and even disappearance of many glaciers in Switzerland, the U.S.A. and Iceland, and the regression of the North Atlantic ice barrier seem to show that there is a slow but sure amelioration of our climate despite the opposing evidence that might seem to be offered by the bitter winter of 1946-7 and the very wet and cold summer of 1954. If this change is taking place, one would expect to see the gradual disappearance of the northern elements in our fauna and flora and the gradual spread of the southern elements in part at least. It is very difficult to prove that a species has entirely disappeared but much easier to recognise the advent of a new one. Such a case is almost certainly that of *Hygrobia hermanni* which is gradually spreading northwards in Yorkshire and made its first local appearance at Throxenby Mere in 1931.

The following abbreviations are used :—

J.H.B.—J. H. Bailey	W.P.—W. Pearson
M.D.B.—M. D. Barnes	H.P.—H. Pollard
E.G.B.—E. G. Bayford	C.M.R.—C. M. Rich
W.K.B.—W. K. Bissill	A.M.R.—A. M. Robertson
H.B.—H. Britten fil.	S.R.—S. Rowntree
J.M.B.—J. M. Brown	C.W.R.—C. W. Russell
H.J.B.—H. J. Burkill	W.J.S.—W. J. Sanders
W.M.C.—W. M. Crawford	W.E.S.—W. E. Sharp
H.J.F.—H. J. Flint	J.W.S.—J. W. Stanforth
W.J.F.—W. J. Fordham	T.S.—T. Stainforth
W.W.F.—W. W. Fowler	C.E.S.—C. E. Stott
R.J.F.—R. J. Fryer	A.H.H.S.—A. H. H. Stow
E.F.G.—E. F. Gilmour	R.A.T.—R. A. Taylor
W.H.—W. Hey	M.L.T.—M. L. Thompson
W.C.H.—W. C. Hey	J.J.W.—J. J. Walker
W.D.H.—W. D. Hincks	E.A.W.—E. A. Wallis
E.C.H.—E. C. Horrell	G.B.W.—G. B. Walsh
H.C.H.—H. C. Horrell	J. W.—J. Walton
R.S.J.—R. S. Johnson	T.W.—T. Wilkinson
R.R.U.K.—R. R. U. Kaufman	A.E.W.—A. E. Winter
R.L.—R. Lawson	T.V.W.—T. V. Wollaston
K.M.—K. Middleton	E.B.W.—E. B. Wigglesworth
H.O.—H. Ostheide	G.A.W.—G. A. Wright
E.J.P.—E. J. Pearce	

CARABIDAE

CICINDELA Linnaeus

campestris L.—Common and widely distributed in suitable places on the moors; local on the coast.

ab. **connata** Heer—Rare; Goathland (C.M.R.).

ab. **conjuncta** D. Torre—Not uncommon with the type at Goathland (R.S.J.).

ab. **funebri** Sturm—Goathland (H.B.).

CARABUS Linnaeus

monilis Fabr.—Fairly common.

[**arvensis** Herbst] s. **silvaticus** Dej.—Local on the moors.

nemoralis Muell., O. F.—Common.

[**glabratus** Payk.] var. **lapponicus** Born—Rare; Langdale End (W.P.); Cross Cliff (S.R.).

[**problematicus** Herbst] s. **gallicus** Géhin—Common.

nitens L.—Common on the moors; smaller and darker than the south-country form - f. **alticola** Walsh.

[**violaceus** L.] var. **sollicitans** Hart.—Common.

CYCHRUS Fabricius

[**caraboides** L.] var. **rostratus** (L.)—Local.

LEISTUS Froelich

spinibarbis (Fabr.)—Uncommon; Langdale End (E.C.H.).

fulvibarbis Dej.—Generally distributed.
terminatus (Hellw.)—Generally distributed.
ferrugineus (L.)—Generally distributed.

NEBRIA Latreille

brevicollis (Fabr.)—Probably common, but often confounded with *N. salina*.

salina Fairm. & Lab.—Common.

gyllenhali (Schoenh.)—Common under wet shingle by running streams.

var. *rufescens* (Stroem, H.)—High Langdale (A.M.R.) ; a reddish upland form.

livida (L.)—At the foot of clay cliffs, now less common ; Scalby Beck Scarborough ; Filey ; under rejectamenta on the beach Gristhorpe Bay, 3/7/48 (Y.N.U. Excn.). A pale specimen and one almost black taken in Scarborough North Bay (W.P.).

NOTIOPHILUS Duméril

aquaticus (L.)—Generally distributed.

hypocritus Putz.—Local on the moors.

palustris (Duft.)—Fairly common.

substriatus Wat., G. R.—Somewhat uncommon.

biguttatus (Fabr.)—Very common.

ELAPHRUS Fabricius

cupreus Duft.—Generally distributed.

riparius (L.)—Generally distributed.

LORICERA Latreille

pilicornis (Fabr.)—Common.

CLIVINA Latreille

fossor (L.)—Common and generally distributed.

collaris (Herbst)—Fairly common in R. Derwent flood-refuse (G.B.W.) ; Scarborough (T.W.) ; Scalby Beck (E.C.H.).

DYSCHIRIUS Panzer

globosus (Herbst)—Common, especially on the moors.

BROSCUS Panzer

cephalotes (L.)—Scalby Mills, Flixton sand-pits (G.B.W.).

MISCODERA Eschscholtz

arctica (Payk.)—On the moors under stones, peat, etc., not common.

ASAPHIDION Des Gozis

flavipes (L.)—Uncommon ; Forge Valley, Silpho Moor (E.C.H.).

BEMBIDION Latreille

litorale (Ol.)—Forge Valley (W.C.H., E.C.H.).

nigricorne Gyll.—Common under felted algae on the moors, especially in the late summer.

lampros (Herbst)—Uncommon.

s. *properans* Steph.—Scarborough (C.E.S.).

var. *coeruleotinctum* Reitt.—Cloughton (E.C.H.).

dentellum (Thunb.)—Forge Valley, Langdale End (E.C.H.).

tibiale (Duft.)—Common.

redtenbacheri Dan., K.—Fairly common.

atrocoeruleum Steph.—Common.

- monticola** Sturm—Local; Forge Valley, Langdale End (E.C.H.).
nitidulum (Marsham)—Fairly common.
stephensii Crotch—Forge Valley, small form (E.C.H.); Robin Hood's Bay (W.J.F.).
rupestre (L.)—Local; Scarborough (W.K.B.); Thornton-le-Dale (G.B.W.).
maritimum Steph.—Local; Scarborough, Robin Hood's Bay (W.J.F.).
ustulatum (L.)—Common and generally distributed.
femoratum Sturm—Scarborough, Ellerburn (G.B.W.).
 [**andreae** (Fabr.)] var. **bualei** du Val—Filey, Gristhorpe, in great numbers on a sunny day in May (W.C.H.); Thornton-le-Dale, etc. (E.C.H.).
saxatile Gyll.—Not uncommon.
testaceum (Duft.)—Forge Valley (E.C.H.).
decorum (Panz.)—Not uncommon.
 [**genei** Kuest.] var. **illigeri** Net.—Filey (W.J.F.); Cornelian Bay (G.B.W.).
gilvipes Sturm—Widely distributed.
quadrimaculatum (L.)—Uncommon but widely distributed.
obtusum Serv.—Widely distributed.
harpaloides Serv.—Locally common.
biguttatum (Fabr.)—Widely distributed.
aeneum Germ.—Scarborough (W.K.B.); Hackness (E.C.H.).
guttula (Fabr.)—Common.
lunulatum (Geoffr. in Fourcr.)—Forge Valley (E.C.H.).
unicolor Chaud.—Widely distributed, common on the moors.
- AEPOPSIS** Jeannel
robinii (Lab.)—Common under slabs of rock at Robin Hood's Bay (T.S. and G.B.W.).
- AEPUS** Samouelle
marinus (Stroem, H.)—Ravenscar, Gristhorpe (T.S. and G.B.W.); Scarborough (G.B.W.).
- TRECHUS** Schellenberg
secalis (Payk.)—One specimen in flood-refuse, Scalby Beck (T.S.).
quadristriatus (Schr.)—Common.
obtusum Er.—Common.
rubens (Fabr.)—Three specimens in flood-refuse, Scalby Beck (T.S.).
fulvus Dej.—Flood-refuse, Scalby Beck (T.S.).
- LASIOTRECHUS** Ganglbauer
discus (Fabr.)—One specimen in flood-refuse, Scalby Beck (T.S.); West Ayton (A.M.R.).
- TRECHOBLEMUS** Ganglbauer
micros (Herbst)—With **Trechus rubens** (T.S.); common in flood-refuse, Sherburn (G.B.W.).
- PATROBUS** Stephens
assimilis Chaud.—Not common, but widely distributed. Filey, Silpho Moor (E.C.H.); Staintondale (W.J.F.); Goathland (T.S.).
atorufus (Stroem, H.)—Fairly common and widely distributed.

PANAGAEUS Latreille

A specimen belonging to this genus was taken in flood-refuse in Scalby Beck, but the species was not determined (R.L.).

CHLAENIUS Samouelle

nigricornis (Fabr.)—Scarborough (R.L.).

vestitus (Payk.)—Scarborough (R.L.); Scalby Beck in flood-refuse (T.S.).

BADISTER Schellenberg

bipustulatus (Fabr.)—Not a common species, but widely distributed.

sodalis (Duft.)—Rare; Forge Valley in moss under stones (W.C.H.).

LICINUS Latreille

punctulatus (Fabr.)—Rare; Scarborough district (W.C.H.).

depressus (Payk.)—Rare; Flamborough (T.S.); Langdale Rigg

HARPALUS Latreille

(G.B.W.).

S. HARPALUS s.s.

aeneus (Fabr.)—Very common and very variable in colour.

latus (L.)—Common and generally distributed.

rubripes (Duft.)—Scarborough (R.L.).

var. *sobrinus* Dej.—Scarborough (R.L.).

tardus (Panz.)—Forge Valley (A.M.R.).

S. OPHONUS Stephens

diffinis Dej.—West Ayton (A.M.R.).

puncticollis (Payk.)—Filey on blossom of knapweed in seed, Aug., 1878 (W.W.F.); Scarborough (E.G.B.).

seladon Schaub.—East Ayton (G.B.W.).

schaubergerianus Puel—Local but widely distributed; Pickering, Forge Valley, Staxton, Beast Cliff, etc.

S. PSEUDOPHONUS Motschulsky

rufipes (De G.)—Very common.

ACUPALPUS Latreille

dorsalis (Fabr.)—Wykeham (A.M.R.).

BRADYCELLUS Erichson

ruficollis (Steph.)—Common.

sharpi Joy—Filey, Scarborough, Forge Valley (E.C.H.).

verbasci (Duft.)—Scarborough (W.K.B.); Gristhorpe (W.J.F.).

harpalinus (Serv.)—West Ayton (W.C.H.); Cloughton (E.C.H.); Ravenscar (W.J.F.).

TRICHOCELLUS Ganglbauer

cognatus (Gyll.)—Locally common, especially on the moors.

placidus (Gyll.)—Locally common, especially in damp places.

DICHEIROTRICHUS du Val

gustavii Crotch—Recorded by E.C.H. from Raincliffe Wood, but this seems a strange locality for this salt-marsh species.

ANISODACTYLUS Dejean

binotatus (Fabr.)—Scarborough (W.K.B.); Forge Valley (A.M.R.).

nemorivagus (Duft.) var. *atricornis* Steph.—Scarborough (W.K.B.).

AMARA Samouelle

plebeja (Gyll.)—Fairly common; Scarborough (W.K.B.); Yedingham (G.B.W.); Raincliffe Wood, Filey, Seamer Moor (E.C.H.).

similata (Gyll.)—"North Riding" (E.B.W.).

ovata (Fabr.)—Fairly common.

communis (Panz.)—Well distributed but not common; Scarborough, Forge Valley (W.C.H.); Raincliffe Wood (E.C.H.); Flamborough (T.S.).

vulgaris (L.)—Rare; Hutton Buscel Moor (W.C.H.).

curta Dej.—Rare; Yedingham flood-refuse (E.F.G.).

aenea (De G.)—Generally distributed.

spretata Dej.—Hutton Buscel Moor; one specimen by shaking moss among heather in a sandy spot (W.C.H.); M. L. Thompson refers this to *famelica*.

eurynota (Panz.)—Uncommon; Hutton Buscel Moor (W.C.H.); melanic form Bempton (E.C.H.).

familiaris (Duft.)—Generally distributed.

tibialis (Payk.)—Uncommon; Scarborough (W.K.B.).

bifrons (Gyll.)—Common in R. Derwent flood-refuse (W.C.H.); Forge Valley (E.C.H.).

praetermissa (Sahlb., C. R.)—Uncommon; Ayton Quarries (W.K.B.).

apricaria (Payk.)—Generally distributed.

fulva (De G.)—Local; Scarborough (R.L.); Flixton sand-pits (G.B.W.).

consularis (Duft.)—Local; Seamer (W.C.H.).

aulica (Panz.)—Common.

convexiuscula (Marsham)—Local; Robin Hood's Bay, one under stone at mouth of Stoup Beck (W.J.F.); Scarborough Mere (W.D.H.).

STOMIS Schellenberg

pumicatus (Panz.)—Fairly common and widely distributed.

FERONIA Latreille

lepida (Leske)—Not common, but widely distributed on the moors. Sawdon Moor (W.C.H.); Langdale Rigg (G.B.W.); Robin Hood's Bay (T.S.), etc.

cuprea (L.)—Fairly common.

caerulescens (L.)—Scarborough (E.C.H.).

macra (Marsham)—Very local; Scarborough (R.L.).

adstricta (Esch.)—Common and generally distributed on the moors.

oblongopunctata (Fabr.)—Rare; Raincliffe Wood, 3 specimens (E.C.H.).

nigra (Schall.)—Common.

melanaria (Ill.)—Very common.

nigrita (Fabr.)—Very common.

anthracina (Ill.)—Very local; Scarborough (R.L.).

minor (Gyll.)—Rare; Seamer Moor, Raincliffe Wood (E.C.H.); Scarborough, 10 specimens (W.K.B.).

strenua (Panz.)—Common.

diligens Sturm—Common.

aethiops (Panz.)—Very local and rare; Hutton Buscel Moor (W.C.H.).

madida (Fabr.)—Abundant.

var. *concinna* Sturm—Common.

ABAX Samouelle

parallelopipedus (Pill. & Mitt.)—Uncommon; in carrion traps in the spring, Raincliffe Wood (G.B.W.).

PLATYDERUS Stephens

ruficollis (Marsham)—Rare; Seamer Moor, one under stone

CALATHUS Samouelle

(A.E.W.).

fuscipes (Goeze)—Common.

erratus Sahlb., C. R.—Fairly common, especially on the moors.

melanocephalus (L.)—Very common.

var. *nubigena* Hal.—Local and uncommon; Goathland (A.H.H.S., R.R.U.K.).

mollis (Marsham)—Scarborough, on the coast (R.L.); Cloughton (E.C.H.).

micropterus (Duft.)—Common in woods, especially under bark, and in moorland valleys in autumn and spring.

piceus (Marsham)—Locally common.

SPHODRUS Schellenberg

leucophthalmus (L.)—Scarborough, one in workshop (R.L.); several in cellar (G.B.W.).

PRISTONYCHUS Dejean

terricola (Herbst)—West Ayton (W.C.H.); Seamer Moor (A.E.W.); Forge Valley (E.C.H.).

ODONTONYX Stephens

rotundatus (Payk.)—Common and generally distributed.

AGONUM Samouelle

marginatum (L.)—Not common; Scarborough (W.K.B.); Raincliffe Wood (G.B.W.).

mülleri (Herbst)—Fairly common.

viduum (Panz.) var. *moestum* (Duft.)—Scarborough (W.K.B.); Raincliffe Wood (G.B.W.).

assimile (Payk.)—Very common.

ruficorne (Goeze)—Very common.

dorsale (Pont.)—Very common.

micans (Nic.)—Scarborough, March and July (W.K.B.).

fuliginosum (Panz.)—Fairly common and widely distributed.

gracile (Gyll.)—Rare; Levisham (H.B.); Raincliffe Wood under bark of fallen firs (W.K.B.).

thoreyi Dej.—Local and rare; Raincliffe Wood (E.C.H.); with the last (W.K.B.).

LEBIA Latreille

chlorocephala (Hoffm.)—Local and uncommon; Scarborough (W.K.B.); Robin Hood's Bay (J.M.B.).

RISOPHILUS Leach

monostigma (Sam.)—Near Pickering (W.J.S.).

atricapillus (L.)—Uncommon; Scarborough (R.L.).

DROMIUS Samouelle

linearis (Ol.)—Common.

agilis (Fabr.)—Not common; under bark, Staintondale (G.B.W.); Scarborough (W.K.B.).

meridionalis Dej.—Not common; Seamer Moor, in faggots East Ayton; Raincliffe Wood (G.B.W.).

quadrinotatus (L.)—Fairly common.

sigma (Rossi)—Throxenby Mere (R.L., A.S., G.B.W.).

notatus Steph.—South Cliff, Scarborough (W.C.H.).

METABLETUS Schmidt-Goebel

foveatus (Geoffr. in Fourcr.)—Several by searching at plant roots in Flixton sand-pits (G.B.W.).

LIONYCHUS Wissmann

quadrillum (Duft.)—Raincliffe Wood at roots of ash (R.L.).

CYMINDIS Latreille

vaporariorum (L.)—Uncommon; on the moors, Langdale Rigg (W.C.H., G.B.W.); near Falcon Inn (G.B.W.); near Robin Hood's Bay (T.S.).

HALIPLIDAE

BRYCHIUS Thomson, C. G.

elevatus (Panz.)—In running stream, West Ayton (W.C.H., G.B.W.).

HALIPLUS Latreille

obliquus (Fabr.)—Snainton brick-ponds, West Ayton (W.C.H.).

lineatocollis (Marsham)—Widely distributed.

ruficollis (De G.)—Common.

heydeni Wehncke—R. Derwent, near Malton, 1 spn. (E.J.P.).

fluvialis Aubé—Rare; Beck Hole (H.B.); Hackness (E.C.H.).

wehncke Gerh.—Uncommon; near Goathland (R.R.U.K.).

fulvus (Fabr.)—Not common; Throxenby Mere (W.C.H., E.C.H., G.B.W.); Ellerbeck (R.R.U.K.).

flavicollis Sturm—Snainton brick-ponds, West Ayton (W.C.H.); Seamer Moor (E.C.H.).

HYGROBIIDAE

HYGROBIA Latreille

hermanni (Fabr.)—Throxenby Mere (G.B.W.).

DYTISCIDAE

LACCOPHILUS Leach

minutus (L.)—Generally distributed; West Ayton, Snainton brick-ponds (W.C.H.); Langdale End, Hackness (E.C.H.); Goathland (R.R.U.K.).

HYPHYDRUS Illiger

ovatus (L.)—Common.

HYGROTUS Stephens

S. HYGROTUS s.s.

inaequalis (Fabr.)—Fairly common.

versicolor (Schall.)—Local; Scarborough (R.L.); Snainton brick-ponds, rather plentiful (W.C.H.).

S. COELAMBUS Thomson, C. G.

confluens (Fabr.)—Local; Filey (Y.N.U. Excn.); Goathland (R.R.U.K.).

impressopunctatus (Schall.)—Rare; Snainton brick-ponds, 1 spn.; East Ayton, 1 spn. (W.C.H.).

DERONECTES Sharp

latus (Steph.)—Local; Cross Cliff (W.C.H.); Ellerbeck (R.R.U.K.).

duodecimpustulatus (Fabr.)—Scalby (R.L.); West Ayton (W.C.H.).

assimilis (Payk.)—Uncommon; Snainton brick-ponds (W.C.H.); Scarborough (R.L.).

depressus (Fabr.)—Throxenby Mere (R.L., E.C.H.); West Ayton (W.C.H.).

elegans (Panz.)—Fairly common and widely distributed.

OREODYTES Seidlitz

davisii (Curt.)—Fairly common in moorland streams.

septentrionalis (Gyll.)—Not uncommon in fast-running streams Scarborough (R.L.); Langdale, West Ayton (W.C.H.); Ellerbeck (R.R.U.K.); Hilla Green (G.B.W.).

rivalis (Gyll.)—With the last two, common.

HYDROPORUS Schellenberg

pictus (Fabr.)—Well distributed in the Scarborough district.

granularis (L.)—Mossy pools near Seamer (W.C.H.).

lepidus (Ol.)—Local; Goathland (R.R.U.K.).

linatus (Fabr.)—West Ayton (W.C.H.); Cloughton (E.C.H.).

tristis (Payk.)—Common in peaty pools on the moors.

umbrosus (Gyll.)—Local; East Ayton, Seamer, Hunmanby (W.C.H.); near Falcon Inn, common, Goathland (G.B.W.).

angustus Sturm—Seamer, abundant (W.C.H.); Goathland in peaty pools, rare (R.R.U.K.).

gyllenhalii Sch.—Common in peaty moorland pools.

morio Aubé—Common in peaty pools.

striola (Gyll.)—Abundant; Seamer (W.C.H.); Sleights in wet sphagnum (H.B.); near the Falcon Inn (G.B.W.).

palustris (L.)—Very common.

erythrocephalus (L.)—Common.

rufifrons (Muell., O.F.)—Local and rare; Seamer (W.C.H.); Goathland (R.R.U.K.).

longulus Muls.—Rare; Maw Rigg near Langdale End, several specimens in a tiny rill (W.C.H., E.C.H.).

melanarius Sturm—Fairly common in peaty pools on the moors.

memnonius Nic.—Local, but widely distributed; Langdale Rigg, Cornelian Bay, Seamer, West Ayton (W.C.H.); Scarborough (R.L.); Goathland (R.R.U.K.); near Falcon Inn (G.B.W.).

obscurus Sturm—Fairly common in peaty moorland pools.

nigrita (Fabr.)—Local; Levisham; very common in pools near the coast (W.C.H.); Filey (G.B.W.); Goathland, Hole of Horcum (H.B.).

discretus Fairm.—Very local and rare; Filey, 2 specimens in small puddle (W.C.H.).

pubescens (Gyll.)—Common.

planus (Fabr.)—Common.

tessellatus Drap.—Throxenby Mere (G.B.W.).

ferrugineus Steph.—Rare; Black Beck, Langdale Rigg, 3 specimens in May, 1895 (W.C.H.); Scarborough (R.L.); Goathland (R.R.U.K.).

obsoletus Aubé—Scalby Beck (R.L., W.C.H.).

LACCORNIS Des Gozis

oblongus (Steph.)—Rare; pond at Seamer, where it is most abundant in June (W.C.H.).

AGABUS Leach

guttatus (Payk.)—Not common; Goathland, Ellerbeck (R.R.U.K.).

biguttatus (Ol.)—Not common; Scarborough (R.L.).

paludosus (Fabr.)—Local; Scarborough (R.L.); Pickering (G.B.W.); Goathland (R.R.U.K.).

uliginosus (L.)—Very local and rare; 3 specimens near Seamer (W.C.H.).

unguicularis Thoms., C. G.—Local; Seamer (W.C.H.); Beedale, a curious form of female with very distinct red spot on each elytron (E.C.H.).

didymus (Ol.)—Local; Filey (W.C.H.); Pickering (G.B.W.); Seamer Moor (E.C.H.); Goathland (R.R.U.K.).

nebulosus (Forst.)—Local; Filey (E.C.H.); Scarborough (E.C.H.); Goathland, very common in late summer (R.R.U.K.).

labiatus (Brahm)—Locally common; Throxenby Mere, Langdale End, Hutton Buscel Moor (G.B.W.).

undulatus (Schränk)—In the collection of W. Pearson there was a specimen said to have been taken in the Scarborough district by W. C. Hey. This record may have been in error.

sturmii (Gyll.)—Common.

chalconatus (Panz.)—Common and widely distributed.

[*melanarius* Aubé—This occurs just outside our area in a pool in Arncliffe Woods (M.L.T.).]

bipustulatus (L.)—Very common.

var. *solieri* Aubé—Goathland (R.R.U.K.).

PLATAMBUS Thomson, C. G.

maculatus (L.)—Common and variable.

ILYBIUS Erichson

fuliginosus (Fabr.)—Common and widely distributed.

ater (De G.)—Fairly common.

aenescens Thoms., C. G.—Very rare; Goathland, moorland reservoir and peat pools (R.R.U.K.).

fenestratus (Fabr.)—Rare; Goathland (R.R.U.K.).

COPELATUS Erichson

haemorrhoidalis (Fabr.)—Uncommon; Filey (E.C.H.).

RANTUS (Dejean) Stephens

exsoletus (Forst.)—Scarborough (R.L.).

pulverosus (Steph.)—Rare; Scalby Beck (E.C.H.).

bistriatus (Bergstr.)—Local; moors near Falcon Inn (G.B.W.); Goathland (R.R.U.K.).

COLYMBETES Schellenberg

fuscus (L.)—Very common.

DYTISCUS Linnaeus

semisulcatus Muell., O. F.—Widely distributed but not common; Scarborough (R.L.); Seamer Moor, Pickering (G.B.W.).

marginalis (L.)—Common.

ACILIUS Leach

sulcatus (L.)—Widely distributed and fairly common.

GYRINIDAE

GYRINUS Geoffroy in Mueller, O. F.

natator (L.)—There are many records for this species but their authenticity is doubtful.

var. **substriatus** Steph.—Helwath Beck (H.B.); Saltergate (W.M.C.).

marinus Gyll.—Throxenby Mere (E.C.H.); Snainton (W.C.H.).

ORECTOCHILUS Stephens

villosus (Muell., O. F.)—Scalby Beck in abundance (A.E.W. and G.B.W.); Hilla Green (G.B.W.).

HYDROPHILIDAE

OCHTHEBIUS Leach

exsculptus Germ.—Local; Black Beck (Langdale End); West Ayton (W.C.H.); Beckhole (H.B.); Goathland (R.R.U.K.); Filey (Y.N.U. Excn., 1903).

dilatatus Steph.—West Ayton, Cornelian Bay (W.C.H.); Scarborough (E.C.H., C.E.S.).

bicolon Germ.—Scarborough (R.L., E.C.H.).

minimus (Fabr.)—Filey (Y.N.U. Excn., 1903); Cloughton (E.C.H.).

HYDRAENA Kugelann

testacea Curt.—Local; West Ayton (W.C.H.); Hayburn Wyke (C.E.S.).

palustris Er.—West Ayton mill-dam, 1 specimen under stone (W.C.H.).

britteni Joy—Local; Hayburn Wyke (G.B.W.).

riparia Kug.—Generally distributed.

nigrita Germ.—Local and rare; Levisham (W.C.H.); Scalby Beck (C.E.S.); Goathland (R.R.U.K.).

rufipes Curt.—Scalby Beck (G.B.W., C.E.S.); Hayburn Wyke (G.B.W.); Langdale End (W.C.H., E.C.H.).

gracilis Germ.—Widely distributed.

s. **elongata** Curt.—Hayburn Wyke (G.B.W.).

pulchella Germ.—Rare; Scalby Beck (R.L.).

minutissima Steph.—Scalby Beck (R.L.).

pygmaea Waterh., G. R.—Rare; West Ayton (W.C.H.); Ellerdale (G.B.W.); Scalby Beck (R.L.).

LIMNEBIUS Leach

truncatellus (Thunb.)—Common and generally distributed.

nitidus (Marsham)—Scalby Beck (R.L.); the Carrs (E.C.H.).

HELOPHORUS Illiger

S. EMPLEURUS Hope

nubilus Fabr.—Fairly common; Filey Cliffs (W.C.H.); Scarborough (E.G.B.); Hilla Green (G.B.W.).

rufipes (Bosc d'Antic)—Uncommon, Yedingham flood-refuse (G.B.W.).

S. CYPHELOPHORUS Kuwert

tuberculatus Gyll.—Very rare; Scarborough (R.L.); it was probably found in peaty patches on the moors, but has not been seen for many years.

S. TRICHELOPHORUS Kuwert

alternans Gené—Local.

S. MEGALELOPHORUS Kuwert

aquaticus (L.)—Common and generally distributed.

var. *aequalis* Thoms., C. G.—Robin Hood's Bay (H.B.).

S. ATRACTELOPHORUS Kuwert

arvernica Muls.—Local; Forge Valley (W.C.H.); Ellerbeck by sweeping under banks (R.R.U.K.).

brevipalpis Bed.—Common.

S. HELOPHORUS s.s.

minutus Fabr.—Goathland, not uncommon but local (R.R.U.K.).

granularis (L.)—Doubtfully recorded from Wykeham (E.G.B.).

flavipes Fabr.—Common.

HYDROCHUS Leach

elongatus (Schall.)—Scarborough (R.L.).

COELOSTOMA Brullé

orbiculare (Fabr.)—Local; Langdale End (E.C.H.); Hole of Horcum (H.B.).

SPHAERIDIUM Fabricius

bipustulatum Fabr.—Scarborough (G.B.W.).

scarabaeoides (L.)—Scarborough, Scalby Mills (G.B.W.).

lunatum Fabr.—Common and generally distributed.

CERCYON Leach

litoralis (Gyll.)—Common on the coast.

var. *binotatum* Steph.—Scarborough (G.B.W.).

depressus Steph.—Just south of Gristhorpe Bay (W.J.F.).

lugubris (Ol.)—Very local; Littlebeck (H.B.).

atomarius Fabr.—Very common.

haemorrhoidalis (Fabr.)—Widely distributed.

melanocephalus (L.)—Very common.

marinus Thoms., C. G.—West Ayton, by the side of a ditch (W.C.H.).

lateralis (Marsham)—Fairly common.

terminatus (Marsham)—Scarborough (C.E.S.).

pygmaeus (Ill.)—Common.

unipunctatus (L.)—Common.

quisquilius (L.)—Probably common but there are few records.

granarius Er.—Rare; Yedingham flood-refuse, 2/51 (E.F.G.).

tristis (Ill.)—Scarborough (W.C.H.).

analys (Payk.)—Common.

MEGASTERNUM Mulsant*obscurum* (Marsham)—Common and generally distributed.**CRYPTOPLEURUM** Mulsant*minutum* (Fabr.)—Common.**HYDROBIUS** Leach*fuscipes* (L.)—Common and generally distributed.var. *picicrus* Thoms., C. G.—Seamer Moor (E.C.H.); Yedingham flood-refuse (G.B.W.).**ANACAENA** Thomson, C. G.*globulus* (Payk.)—Common.*limbata* (Fabr.)—Filey (T.S.); Yedingham flood-refuse (G.B.W.); Langdale End (E.C.H.).**LACCOBIUS** Erichson*minutus* (L.)—Cornelian Bay (C.E.S.).*biguttatus* Gerh.—Cayton Bay (E.C.H.).*striatulus* (Fabr.)—Sherburn, flood-refuse (G.B.W.); Filey (W.C.H.); Goathland (Y.N.U. Excn.).*alutaceus* Thoms., C. G.—Very common at Snainton (W.C.H.); Seamer Moor, Langdale End (E.C.H.); Goathland (R.R.U.K.).**ENOCHRUS** Thomson, C. G.*melanocephalus* (Fabr.)—Scarborough (R.L.); Throxenby Mere (E.C.H.).*testaceus* (Fabr.)—Cayton Bay and the Carrs (E.C.H.).*affinis* (Thunb.)—Rare; Biller Howe Dale (G.B.W.).**CHAETARTHRIA** Stephens*seminulum* (Herbst)—Widely distributed round Scarborough.**BEROSUS** Leach*spinus* (v. Stev.)—Rare; Scarborough (R.L.); Cayton Bay (G.B.W.).

SILPHIDAE

NECROPHORUS Fabricius*humator* (Goeze)—Very common.*investigator* Zett.—Common.*vespilloides* Herbst—Very common in carrion and decaying fungi.*vespillo* (L.)—Common.*vestigator* Hersch.—Very local; Raincliffe Wood (G.B.W.); Scarborough (E.F.G.).**NECRODES** Leach*littoralis* (L.)—Rare; Scarborough in a "maggot-house" (R.L.).**THANATOPHILUS** Leach*rugosus* (L.)—Very common.*sinuatus* (Fabr.)—Pickering (Y.N.U. Excn., 1938).**OEOPTOMA** Leach*thoracicum* (L.)—Common.**ACLYPEA** Reitter*opaca* (L.)—Local; Scarborough (E.C.H.); Ebberston (W.P.); Ramsdale (J.M.B.).**XYLODREPA** Thomson, C. G.*quadripunctata* (L.)—Rare; Raincliffe Wood (G.B.W.); Langdale End (A.M.R.).

SILPHA Linnaeus

tyrolensis Laich. var. *nigrita* Creutz.—Rare ; Scarborough (E.C.H., G.B.W.).

ABLATTARIA Reitter

laevigata (Fabr.)—Scarborough (T. Bean).

PHOSPHUGA Leach

atrata (L.)—Common.

ab. *pedemontana* (Fabr.)—Fairly common and widely distributed.

LEPTINUS Mueller, P. W. J.

testaceus Muell., P.W.J.—Not common but widely distributed ; Scalby Beck in flood-refuse (R.L.) ; Helwath Beck (H.B.) ; Forge Valley and Scarborough in moss (G.B.W.) ; Raincliffe Wood in moles' nest (R.A.T.) ; Filey in nest of field-mouse (E.C.H.) ; Seamer Moor in moles' nest (G.B.W.).

PTOMAPHAGUS Knoch

subvillosus (Goeze)—Fairly common and widely distributed.

var. *sericatus* (Chaud.)—Fairly common in Scarborough district.

NARGUS Thomson, C. G.

velox (Spence)—There are only a few local records of this common beetle.

wilkinii (Spence)—Commoner than *N. velox*.

anisotomoides (Spence)—Scarborough (R.L.).

CHOLEVA Latreille

spadicea (Sturm)—Uncommon ; Hayburn Wyke and Raincliffe Wood (G.B.W.).

[*agilis* (Ill.)—Recorded from just outside our area at Ruswarp (F. Readman).]

angustata (Fabr.)—Grinstead (W.J.F.) ; Raincliffe Wood (G.B.W.).

jeanneli Britt.—Scarborough (R.L.).

CATOPS Paykull

nigricans (Spence)—Common.

fuliginosus Er.—Raincliffe Wood (W.J.F.).

grandicollis Er.—Raincliffe Wood in carrion-trap (W.J.F.).

nigrita Er.—Local ; Scarborough (E.G.B.) ; Hutton Buscel (W.P.) ; Raincliffe Wood (G.B.W.).

coracinus Kelln.—Rare ; Raincliffe Wood (G.B.W.).

morio (Fabr.)—Rare ; Raincliffe Wood (G.B.W.).

kirbii (Spence)—Common.

chrysomeloides (Panz.)—Local ; Raincliffe Wood, Seamer Moor, Yedmandale (G.B.W.).

longulus Kelln.—Rare ; Raincliffe Wood in carrion traps (G.B.W.).

tristis (Panz.)—Common and widely distributed.

SCIODREPA Thomson, C. G.

fumata (Spence)—Common.

watsoni (Spence)—Local ; Raincliffe Wood, East Ayton (G.B.W.) ; Sleights (H.B.).

COLON Herbst

latum Kraatz—Very rare ; Scarborough (R.L.).

dentipes Sahlb., C.R.

var. **zebei** Kraatz—Very rare; Forge Valley, male by sweeping in late October (G.B.W.).

var. **denticulatum** Kraatz—Very rare; Forge Valley. male by sweeping (G.B.W.).

brunneum Latr.—Rare; Scarborough (R.L.).

serripes Sahlb., C.R.—Rare; Scarborough (R.L.); Scalby Beck (G.B.W.).

LEIODIDAE

HYDNOBIUS Schmidt, W. L. E.

punctatus (Sturm)—Rare; Scarborough (T.W.); Ringing Keld Bog by sweeping in a boggy place on the moor (R.L.).

var. **punctatissimus** (Steph.)—Rare; Scalby Beck flood-refuse, Ringing Keld Bog (R.L.).

LEIODES Latreille

rugosa Steph.—Very local; plentiful in flood-refuse in Scalby Beck (R.L.); Raincliffe Wood, 1 specimen by night sweeping in late October (G.B.W.).

cinnamomea (Panz.)—Raincliffe Wood, 4 specimens in rain-water pools, end of October (G.B.W.).

calcarata (Er.)—Fairly common; West Ayton (W.C.H.); Littlebeck (M.L.T.); Scalby Beck, plentiful in flood-refuse (R.L.).

ab. **nigrescens** Fleisch.—Yedmandale (E.C.H.).

lunicollis (Rye)—Rare; Scalby Beck in flood-refuse (R.L.).

dubia (Kug.)—Scalby Beck, plentiful in flood-refuse (R.L.); Danes' Dyke (G.B.W.); Scarborough (C.E.S.).

brunnea (Sturm)—Rare; Scalby Beck in flood-refuse (R.L.).

litura Steph.—Scalby Beck, plentiful in flood-refuse (R.L.).

ovalis (Schmidt, W.L.E.)—Scalby Beck, plentiful (R.L.); Goathland (H.B.).

similata (Rye)—Scarborough (R.L.).

scita (Er.)—Scalby Beck, plentiful in flood-refuse (R.L.).

badia (Sturm)—Scalby Beck, plentiful in flood-refuse (R.L.); Scarborough (C.E.S.).

parvula (Sahlb., C. R.)—Rare in flood-refuse (R.L.).

CYRTUSA Erichson

minuta (Ahr.)—In flood-refuse; Scalby Beck, plentiful in spring (R.L.); Yedingham (G.B.W.).

COLENIS Erichson

immunda (Sturm)—Scarborough in moss (R.L.).

AMPHICYLLIS Erichson

globus (Fabr.)—Scarborough at fern roots in Raincliffe Wood (R.L.).

ANISOTOMA Kugelann

humeralis (Fabr.)—Widely distributed; Raincliffe Wood in dry fungus on alder (R.L.); Hutton Buscel (W.C.H.); Pickering (M.D.B.); Helwath Beck (H.B.).

orbicularis (Herbst)—Rare; Raincliffe Wood at fern root (G.B.W.).

AGATHIDIUM Kugelann

- nigripenne** (Fabr.)—Fairly common and generally distributed.
atrum (Payk.)—Ringing Keld Bog (E.C.H.); Seamer Moor in moss, Beckhole (G.B.W.).
marginatum Sturm—Scarborough (E.G.B.).
varians Beck—Scarborough (R.L.); Raincliffe Wood (G.B.W.).
rotundatum Gyll.—Rare; Sleights (H.B.).
nigrinum Sturm—Sleights (H.B.).

CLAMBIDAE

CALYPTOMERUS Redtenbacher

- dubius** (Marsham)—Rare; Sleights (H.B.).

CLAMBUS Fischer von Waldheim

- minutus** (Sturm)—Hilla Green (G.B.W.); Beckhole, not uncommon in flood-refuse (H.B.).
armadillus (De G.)—Local; Scarborough (R.L.); Thornton-le-Dale (G.B.W.); Cloughton (E.C.H.).

SCYDMAENIDAE

EUTHEIA Stephens

- schaumii** Kies.—In great abundance for several years near the Mere, when the tip was there (G.B.W.).
scydmaenoides Steph.—Rare; Raincliffe Wood, under bark (R.L.).

NEURAPHES Thomson, C. G.

- rubicundus** (Schaum)—Rare; Raincliffe Wood, under bark (R.L.); Beckhole (H.B.).
elongatulus (Muell., P.W.J. & Kunze)—Rare; Scarborough (R.L.); Forge Valley (E.C.H.).
sparshalli (Denny)—Rare; Scarborough (R.L.); Beckhole (H.B.).

STENICHNUS Thomson, C. G.

- scutellaris** (Muell., P.W.J. & Kunze)—Scarborough North-side, plentiful in moss (R.L., C.E.S.); Seamer Moor (E.C.H.); Raincliffe Wood (G.B.W.).
collaris (Muell., P.W.J. & Kunze) — Fairly common and widely distributed.
exilis (Er.)—West Ayton Moor, in moss (W.C.H.).

EUCONNUS Thomson, C. G.

- fimetarius** (Chaud.)—Scarborough (R.L.).
nanus (Schaum)—Raincliffe Wood, in moss on fern roots, in some numbers (R.L., T.W.).

SCYDMAENUS Latreille

- tarsatus** Muell., P. W. J. & Kunze — West Ayton (W.C.H.); Scarborough, rather plentiful in haystack bottom (R.L.); Beckhole (H.B.).

ORTHOPERIDAE

ORTHOPERUS Stephens

- brunnipes** (Gyll.)—Rare; Scarborough, 1 specimen (T.W.); Beckhole, in haystack refuse (H.B.).

PTILIIDAE

PTENIDIUM Erichson

laevigatum Er.—Raincliffe Wood in 'moles' nests, Seamer in wasps' nests, Scarborough (G.B.W.); Saltergate, in refuse in shippon (H.B.).

turgidum Thoms., C.G.—Rare; Scarborough (T.W.).

intermedium Wank.—Scarborough, under rotten birch-bark in March and April (T.W.).

fuscicorne Er.—Scarborough, South Cliff (C.E.S.).

pusillum (Gyll.)—Scarborough (R.L., G.B.W.); Beckhole, Saltergate (H.B.).

punctatum (Gyll.)—Scalby Mills, common in rotting sea-weed (G.B.W.).

nitidum (Heer)—Raincliffe Wood, Thornton-le-Dale, Yedingham flood refuse (G.B.W.); Beckhole, Saltergate (H.B.).

PTILIUM Erichson

myrmecophilum (All.)—Barns Cliff, common with **Formica rufa** (R.L., G.B.W.); Helwath Beck (H.B.).

PTILIOLUM Seidlitz

spencei—Rare; Raincliffe Wood, in moss (G.B.W.); Thornton-le-Dale (G.B.W.).

NEPHANES Thomson, C. G.

titan (Newm.)—Barns Cliff, in nests of **Formica rufa** (C.E.S., G.B.W.).

PTERYX Matthews, A.

suturalis (Heer)—Scarborough (R.L.); Raincliffe Wood (G.B.W.).

ACROTRICHIS Motschulsky

grandicollis (Mann.)—Raincliffe Wood (E.C.H., G.B.W.); Sleights (H.B.).

montandonii (All.)—Barns Cliff, abundant in nests of **Formica rufa** (G.B.W.); Helwath Beck, Beckhole, in haystack refuse (H.B.).

atomaria (De G.)—Scarborough (R.L.); Forge Valley (G.B.W.); Beckhole, in haystack, Saltergate, in shippon (H.B.).

intermedia (Gillm.)—Forge Valley, in moss, Raincliffe Wood, in cut grass, Scalby (G.B.W.); Beckhole (H.B.).

fascicularis (Herbst)—Scalby, common in cut grass (G.B.W.); Beckhole (H.B.).

var. **laetitiae** (Matth., A.) Raincliffe Wood, in moss (G.B.W.); Beckhole (H.B.).

chevrolati (All.)—Scarborough (R.L.).

SCAPHIDIIDAE

SCAPHIDIUM Olivier

quadrimaculatum Ol.—Fairly common and widely distributed.

SCAPHISOMA Leach

agaricinum (L.)—Local; Sawdon Dale, under bark (G.B.W.); Pickering (M.D.B.); Sleights (H.B.).

boleti (Panz.)—Local; Cayton Bay (R.A.T.); Helwath Beck (H.B.).

STAPHYLINIDAE

SIAGONIUM Kirby, W.

quadricorne Kirby, W.—Rare; Raincliffe Wood, under bark (R.L.); Deepdale (A.E.W.); Forge Valley (G.B.W.).

MICROPEPLUS Latreille

staphylinoides (Marshall)—Scarborough (E.G.B.); Filey, in nest of field-mouse (E.C.H.); Scalby (G.B.W.).

fulvus Er.—Hackness; in nest of field-mouse, Filey (E.C.H.); Scarborough (C.E.S., G.B.W.); Beckhole (H.B.).

porcatus (Fabr.)—Yedingham flood-refuse (G.B.W.).

PSEUDOPSIS Newman

sulcata Newm.—Rare, but widely distributed in haystacks near Scarborough (T.S., G.B.W.).

PHLOEOCHARIS Mannerheim

subtilissima Mann.—Somewhat local, but not uncommon.

METOPSIA Wollaston

clypeata (Muell., P.W.J.)—Scarborough, in moss (R.L.); Filey (E.C.H.); Sleights, Goathland (H.B.).

MEGARTHURUS Stephens

depressus (Payk.)—Not uncommon round Scarborough.

affinis Mill., L.—Rare; Givendale (G.B.W.).

sinuato-collis (Boisd. & Lac.)—Rare; Scarborough (R.L.).

denticollis (Beck)—Uncommon; Forge Valley, 1 in moss; Scalby High Moor (G.B.W.).

PROTEINUS Latreille

ovalis Steph.—Fairly common and generally distributed.

brachypterus (Fabr.)—Common.

macropterus (Gyll.)—Raincliffe Wood, not uncommon in fungus heaps (G.B.W.).

EUSPHALERUM Kraatz

pallidum (Grav.)—Somewhat local but not uncommon.

sorbi (Gyll.)—Fairly common.

torquatum (Marsh.)—Common, at times abundant.

primulae (Steph.)—Common.

minutum (Fabr.)—Common.

ACRULIA Thomson, C. G.

inflata (Gyll.)—Rare, but widely distributed in the Scarborough district.

ACROLOCHA Thomson, C. G.

striata (Grav.)—Raincliffe Wood (H.C.H.); Yedingham flood-refuse (G.B.W.); Gristhorpe in sheep-dung (W.J.F.).

PHYLLODREPA Thomson, C. G.

floralis (Payk.)—Common.

vilis (Er.)—Local; Wykeham, under bark (G.B.W.); Goathland (H.B.).

OMALIUM Gravenhorst

laeviusculum Gyll.—Common in decaying sea-weed.

rivulare (Payk.)—Very common.

septentrionis Thoms., C.G.—Very rare; Scalby Beck, 1 in flood-refuse (G.B.W.).

allardi Fairm.—Local; Sleights (H.B.).

oxyacanthæ Grav.—Local; Scarborough (G.B.W.).

exiguum Gyll.—Scarborough (Fowler, Brit. Col. II, 414).

caesum Grav.—Rare; Raincliffe Wood in dead leaves (G.B.W.).

italicum Bernh.—Rare; Scarborough (R.L.).

excavatum Steph.—Common.

PHLOEONOMUS Heer

pusillus (Grav.)—Fairly common under bark.

XYLODROMUS Heer

depressus (Grav.)—East Ayton, in haystack (W.C.H.).

concinus (Marsham)—West Ayton (W.C.H.); Scarborough (G.B.W.); Beckhole (H.B.).

ab. fuliginosum Heer—Scalby (G.B.W.).

PHILORINUM Kraatz

sordidum (Steph.)—Fairly common.

MICRALYMMMA Westwood

marinum (Stroem, H.)—Common between layers of rock on the coast. Robin Hood's Bay (T.S., G.B.W.); Scarborough (E.C.H.); Gristhorpe Bay (G.B.W.).

PHYLLODREPOIDEA Ganglbauer

crenata (Grav.)—Rare; Sleights (H.B.).

DELIPHRUM Erichson

tectum (Payk.)—Scalby Beck, in flood refuse (R.L.).

ANTHOBIUM Samouelle

unicolor (Marsham)—Common.

atrocephalum (Gyll.)—Fairly common.

OLOPHRUM Erichson

piceum (Gyll.)—Common.

fusum (Grav.)—Scarborough (R.L.); Hackness (E.C.H.).

consimile (Gyll.)—Rare; Seamer Moor, 2 in moss (G.B.W.); Scarborough (C.E.S.).

ACIDOTA Stephens

crenata (Fabr.)—Rare; Ringing Keld Bog, in sphagnum (R.L.).

cruentata (Mann.)—Rare; Scarborough (R.L.).

var. ferrugineum (Er.)—Scalby Beck, 5 specimens in flood-refuse (R.L.).

LESTEVA Latreille

punctata Er.—Hayburn Wyke, Goathland, common in moss in waterfalls (G.B.W.).

heeri Fauv.—Fairly common and widely distributed.

longelytrata (Goeze)—Common.

s. maura Er.—Not uncommon on banks of Scalby Beck, Ellerburn (G.B.W.); Scarborough (C.E.S.).

monticola Kies.—Rare; Forge Valley, in moss (G.B.W.).

pubescens Mann.—Generally distributed in the Scarborough district.

GEODROMICUS Redtenbacher

plagiatus (Fabr.)—Rare; Scarborough (R.L.); Grosmont (W.J.F.).

ANTHOPHAGUS Gravenhorst*caraboides* (L.)—Common and generally distributed.**CORYPHIUM** Stephens*angusticollis* Steph.—Rare; Forge Valley (G.B.W.).**SYNTOMIUM** Curtis*aeneum* (Muell., P.W.J.)—Local; Raincliffe Wood (R.L.); Yedingham flood-refuse (G.B.W.).**DELEASTER** Erichson*dichrous* (Grav.)—Scalby Beck, in flood-refuse (R.L., G.B.W.).var. *leachii* (Curt.)—Scalby Beck (R.L.).**COPROPHILUS** Latreille*striatulus* (Fabr.)—Scarborough (R.L.); Beckhole (H.B.); West Ayton (W.C.H.).**ANCYROPHORUS** Kraatz*aureus* Fauv.—Uncommon; Scalby Beck, in flood-refuse (R.L.,*omalinus* (Er.)—With the last (R.L.). G.B.W.).**THINOBIUS** Kiesenwetter*linearis* Kr.—Rare; Scarborough (T.W.); Hayburn Wyke (R.L.).*longipennis* (Heer)—Scalby Beck, in gravel (R.L.).**TROGOPHLOEUS** Mannerheim*arcuatus* (Steph.)—Local; Scarborough (W.H.); Yedingham flood-refuse (G.B.W.).*bilineatus* (Steph.)—Local; Scarborough (T.W.); Raincliffe Wood (E.C.H.).*elongatulus* Er.—Fairly common.*corticinus* (Grav.)—Scarborough (T.W.).*pusillus* (Grav.)—Rare; Scalby Beck, 1 in flood-refuse (G.B.W.).**APLODERUS** Stephens*caelatus* (Grav.)—Uncommon; Yedingham and Sherburn, in flood-refuse; Forge Valley by sweeping (G.B.W.).**OXYTELUS** Gravenhorst*rugosus* (Fabr.)—Very common.*insecatus* Grav.—Rare; Forge Valley (E.C.H.).*laqueatus* (Marsham)—Common.*sculptus* Grav.—Common; a melanic form in Lowdales (E.C.H.).*inustus* Grav.—Common.*sculpturatus* Grav.—Very common.*nitidulus* Grav.—Common.*complanatus* Er.—Rare; Scarborough, in dung (G.B.W.).*fairmairei* Pand.—Hole of Horcum, frequent in sheep-dung (H.B.).*tetracarinatus* (Block)—Very common.**PLATYSTETHUS** Mannerheim*arenarius* (Geoffr. in Fourcr.)—Somewhat local but widely distributed.*cornutus* (Grav.)—Scarborough (R.L.); Cornelian Bay, Sherburn flood-refuse (G.B.W.); Fylingdales Moor (H.B.).**BLEDIUS** Samouelle*pallipes* (Grav.)—Local; Scarborough (Fowler, Brit. Col., II. 368); Robin Hood's Bay (H.B.).

terebrans Sch.—Whisperdales (E.C.H.). This was determined by Dr. Joy, but Mr. Bayford says it is **pallipes**.

longulus Er.—Scalby Beck (R.L.).

opacus (Block)—Cornelian Bay (R.L.); base of cliffs, Filey, 6/52 (J. H. Flint).

gallicus (Grav.)—Cornelian Bay (R.L., C.E.S.).

femoralis (Gyll.)—The red variety only, in plenty, Scarborough (R.L.).

[**dissimilis** Er.—The only British locality for this species is in the clay cliffs just south of Bridlington; the var. **nigricans** Er. occurs with **erraticus** Er.—Rare; Whisperdales (E.C.H.). it.]

subterraneus Er. Local; Scalby Beck, in flood-refuse (R.L.); Pickering (G.B.W.).

arenoides Tott.—Scarborough (R.L.).

OXYPORUS Fabricius

rufus (L.)—Not common but widely distributed; Wykeham, Flixton.

Yedmandale (G.B.W.); Scalby Beck, in flood-refuse (R.L.).

STENUS Latreille

biguttatus (L.)—Not common; Scalby Beck (H.C.H.).

comma Lec.—Rare; Langdale End (E.C.H.).

guttula Muell., P.W.J.—Common.

gwynemeri du Val—Not uncommon in moss in waterfalls; Hayburn Wyke, Goathland (G.B.W.); Scalby Beck (R.L., E.C.H.).

juno Fabr.—Common.

clavicornis (Scop.)—Common and generally distributed.

rogeri Kr.—Common.

bimaculatus Gyll.—Fairly common but somewhat local.

boops Ljungh—Common.

morio Grav.—Very local; Cornelian Bay (G.B.W.).

melanopus (Marsham)—Filey (E.C.H.).

argus Grav.—Scarborough (E.G.B.).

pusillus Steph.—Common.

nanus Steph.—Not common; Burniston (G.B.W.); Scarborough (C.E.S.).

carbonarius Gyll.—Yedingham flood refuse (G.B.W.).

crassus Steph.—Scarborough (Fowler, Brit. Col. II, 343); Sherburn flood-refuse (G.B.W.).

brunnipes Steph.—Common and generally distributed.

nigritulus Gyll.—Rare; Scarborough, in cut grass (G.B.W.).

latifrons Er.—Hayburn Wyke (W.C.H.); Raincliffe Wood, Scarborough (E.C.H.).

fulvicornis Steph.—Somewhat local but well distributed.

tarsalis Ljungh—Common.

similis (Herbst)—Common.

cicindeloides (Schall.)—Hackness, Scalby Beck, Raincliffe Wood (E.C.H.).

binotatus Ljungh—West Ayton (W.C.H.); Raincliffe Wood, Cayton Bay (E.C.H.); Sherburn, in flood-refuse (G.B.W.).

pubescens Steph.—Common.

flavipes Steph.—Common.

nitidiusculus Steph.—Common.

picipennis Er.—East Ayton (W.C.H.); Scarborough (C.E.S.).

bifoveolatus Gyll.—Common in Scarborough district (G.B.W.);
Flamborough (T.S.).

picipes Steph.—Common.

aceris Steph.—Uncommon; Forge Valley (G.B.W.); Scarborough
(C.E.S.).

impressus Germ.—Common.

erichsoni Rye—Hackness in wet moss (W.C.H.).

ossium Steph.—Raincliffe Wood (E.C.H.); Scarborough (C.E.S.);
Sherburn (G.B.W.).

subaeneus Er.—Cloughton (E.C.H.).

palustris Er.—Scarborough (E.G.B.); Raincliffe Wood (E.C.H.).

DIANOUS Samouelle

coerulescens (Gyll.)—Common in moss in waterfalls.

EUAESTHETUS Gravenhorst

ruficapillus Boisd. & Lac.—Scarborough, by beating oaks (R.L.);
Thornton-le-Dale (E.C.H.).

PAEDERUS Fabricius

litoralis Grav.—Throxenby Mere (R.L., E.C.H.); Thornton-le-Dale
(E.C.H.).

RUGILUS (Samouelle) Curtis

orbiculatus (Payk.)—Common.

erichsoni (Fauv.)—Rather local.

MEDON Stephens

fuscus (Mann.)—Forge Valley, several under stone (W.C.H.);
Hackness, Raincliffe Wood (E.C.H.).

pocoferus Peyr.—Rare; Cloughton (E.C.H.).

SUNIUS Stephens

propinquus (Bris.)—Rare; Yedingham, 1 in flood-refuse (G.B.W.).

LITHOCHARIS Dejean

obsoleta (von Nordm.)—Rare; Scarborough (R.L.); in cut grass,
Scarborough (G.B.W.).

ochracea (Grav.)—Common.

LATHROBIUM Gravenhorst

multipunctum Grav.—Local; Scarborough (R.L.); Scalby Beck
(G.B.W.).

quadratum (Payk.)—Scarborough (R.L.).

terminatum Grav.—Local; Scarborough (R.L.); Yedingham flood-
refuse (G.B.W.).

[*elongatum* (L.)] var. *fraudulentum* Ganglb.—West Ayton
(W.C.H.); Forge Valley (E.C.H.).

geminum Kraatz—Yedingham flood-refuse (G.B.W.); West Ayton
(W.C.H.).

ripicola Czwal.—Scalby Beck (G.B.W.).

fulvipenne Grav.—Common.

brunnipes (Fabr.)—Common.

longulum Grav.—Rare; Yedingham flood-refuse (G.B.W.).

OCHTHEPHILUM Stephens

fracticorne (Payk.)—Rare; Ringing Keld Bog, in wet sphagnum (E.C.H.).

LEPTACINUS Erichson

parumpunctatus (Gyll.)—Gristhorpe, sheep-dung (W.J.F.).

sulcifrons (Steph.)—Common.

formicetorum Maerk.—Barns Cliff, Langdale, common in nests of

Formica rufa (G.B.W.); Helwath Beck (H.B.).

XANTHOLINUS Serville

fracticornis (Muell., O.F.)—Very common.

angustatus Steph.—Local; Raincliffe Wood, Givendale (E.C.H.);

Hole of Horcum, Beckhole (H.B.).

atratus Heer—Helwath Beck (H.B.).

glabratus (Grav.)—Common.

tricolor (Fabr.)—Pickering (E.C.H.); Goathland (H.B.).

linearis (Oliv.)—Common.

longiventris Heer—Fairly common.

GAUROPTERUS Thomson, C. G.

fulgidus (Fabr.)—Cayton Bay (W.P.).

BAPTOLINUS Kraatz

affinis (Payk.)—Common.

GYROHYPNUS Samouelle

punctulatus (Goeze)—Very common.

laeviusculus (Steph.)—Local; Raincliffe Wood (H.C.H.).

angustus (Steph.)—Common and generally distributed.

myrmecophilus (Kies.)—Not quite so common as the last.

PHILONTHUS Stephens

splendens (Fabr.)—Common.

intermedius Boisd. & Lac. var *donisthorpei* Dollm.—Filey (W.J.F.);

Yedingham flood-refuse (G.B.W.).

laminatus (Cruetz)—Fairly common.

politus (L.)—Common.

succicola Thoms., C. G.—Seamer Moor (G.B.W.); Scarborough (G.B.W., C.E.S.).

addendus Sharp—Yedingham flood-refuse (G.B.W.).

tenuicornis Muls. & Rey—Harwood Dale (G.B.W.).

rotundicollis Mén.—Very local; Scarborough (W.K.B.); Harwood Dale (G.B.W.); Beckhole (H.B.).

sanguinolentus (Grav.)—Not common; Yedingham flood-refuse (G.B.W.).

decorus (Grav.)—Common and widely distributed.

fuscipennis (Mann.)—Common and widely distributed.

mannerheimi Fauv.—Rare; Yedingham flood-refuse, 2 specimens (G.B.W.).

varius (Gyll.)—Common.

marginatus (Fabr.)—Common.

longicornis Steph.—Scarborough (C.W.R.); Scalby (G.B.W.).

varians (Payk.)—Common, especially in dung.

jurgans Tott.—Scarborough (G.B.W.).

albipes (Grav.)—Uncommon; Sherburn flood-refuse (G.B.W., J.J.W.).

fimetarius (Grav.)—Common and generally distributed.

cephalotes (Grav.)—Uncommon; Seamer Moor, 1 in carrion trap in January (G.B.W.).

pachycephalus Nordm.—Common.

nigriventris Thoms., C. G.—Uncommon; Raincliffe Wood (G.B.W.).

ventralis (Grav.)—West Ayton, in dung heaps (W.C.H.).

discoideus (Grav.)—Scarborough (R.L.); Raincliffe Wood

nigrita (Grav.)—Sleights (H.B.). (E.C.H.).

puella von Nordm.—Fairly common.

rectangulus Sharp—Raincliffe Wood (G.B.W.).

GABRIUS Stephens

splendidulus Grav.—Thornton-le-Dale, 1/8/53 (A.M.R.).

nigritulus (Grav.)—Common in Yedingham flood-refuse (G.B.W.); Beckhole (H.B.); Scarborough (R.L.).

pennatus Sharp—Common; Ayton, Yedingham flood-refuse (G.B.W.).

appendiculatus Sharp—Sherburn flood-refuse (G.B.W., J.J.W.); Beckhole (H.B.).

CAFIUS Stephens

xantholoma (Grav.)—Very common; sometimes swarms in sea-weed.

var. *variolosus* Sharp—Not uncommon on seaweed at the mouth of Scalby Beck (G.B.W.).

REMUS Holme

sericeus Holme—Cornelian Bay under sea-weed (R.L.).

STAPHYLINUS Linnaeus

pubescens De G.—Local; Scarborough (R.L.).

stercorarius Oliv.—Fairly common.

caesareus Ced.—Langdale End (W.C.H.); near Scarborough in very wet moss (R.L.).

erythropterus (L.)—Uncommon; Scarborough (R.L.); Langdale (G.B.W.).

olens Muell., O.F.—Common, especially in the autumn.

brunnipes Fabr.—Common and widely distributed.

aeneocephalus De G.—All my local specimens are this species s. str (G.B.W.).

ater Grav.—Scarborough (E.C.H.).

globulifer Geoffr. in Fourcr.—Fairly common.

morsitans Rossi—Rare; Fylinghall, 1 specimen (G.B.W.); Thornton-le-Dale (W.D.H.).

ONTHOLESTES Ganglbauer

tessellatus (Geoffr. in Fourcr.)—Not common but widely distributed.

CREOPHILUS Samouelle

maxillosus (L.)—Not a common species near Scarborough.

HETEROTHOPS Stephens

binotatus (Grav.)—Beckhole (H.B.).

praeivius Er.—Scarborough (R.L.).

var. *niger* Kr.—Near Bridlington in moles' nest (W.E.S.).

QUEDIUS Stephens

brevis Er.—Not common; Barns Cliff, in nests of *Formica rufa* (G.B.W.); Langdale (E.C.H.); Helwath Beck (H.B.); Filey, away from ants' nests (E.C.H.).

lateralis (Grav.)—Local; Robin Hood's Bay (W.J.F.); Thornton-le-Dale (W.D.H.).

longicornis Kr.—Rare; Raincliffe Wood, 1 in carrion; Oliver's Mount, 1 in rotten turnip (G.B.W.).

nigrocaeruleus Fauv.—Rare; 1 bred from moles' nest at Ganton (G.B.W.).

othiniensis (Joh.)—Fairly common in moles' nests; Raincliffe Wood, Sherburn, Brompton (G.B.W.).

cruentus (Oliv.)—Not common; Forge Valley (H.C.H.).

brevicornis Thom., C. G.—A specimen bred from moles' nest near Bridlington (W.E.S.).

mesomelinus (Marsham)—Common and generally distributed.

maurus Sahlb., C.R.—Local; Forge Valley (G.B.W.); Goathland (H.B.).

cinctus (Payk.)—Fairly common.

laevigatus (Gyll.)—Uncommon; Forge Valley (G.B.W.); Thornton-le-Dale (W.D.H.); Sleights (H.B.).

fuliginosus (Grav.)—Common.

tristis (Grav.)—Common.

molochinus (Grav.)—Common.

picipes (Mann.)—Fairly common and widely distributed.

maritimus Sahlb.—Not uncommon in moss, especially in waterfalls; our local records of **umbrinus** Er. must for the present be transferred to this species.

nigriceps Kr.—Local; Harwood Dale, Seamer Moor (G.B.W.).

maurorufus (Grav.)—Hayburn Wyke (G.B.W., A.E.W.).

fumatus Steph.—Raincliffe Wood, Forge Valley, Hayburn Wyke (G.B.W.).

auricomus Kies.—Not uncommon in moss in waterfalls.

scintillans (Grav.)—Scarborough (G.B.W.).

rufipes (Grav.)—Scarborough (T.S.); Yedingham (G.B.W.).

semiaeneus Steph.—Robin Hood's Bay (W.J.F.).

hyperboreus Er.—Common in R. Derwent flood-refuse.

boops (Grav.)—The local records of this species need to be revised.

We probably possess **aridulus** (Janss.) and **arestor** Tott.

HABROCERUS Erichson

capillaricornis (Grav.)—Rare; Scarborough (R.L.).

TRICHOPHYA Mannerheim

pilicornis (Gyll.)—Very local; Scarborough (R.L.); Yedmandale (G.B.W.).

MYCETOPORUS Mannerheim

brunneus (Marsham)—Somewhat local; Sherburn flood-refuse, Stony Marl Moor, under felted algae (G.B.W.); Beckhole (H.B.).

longulus Mann.—Yedingham flood-refuse, Saltergate (G.B.W.); Goathland (H.B.).

splendidus (Grav.)—Seamer Carrs (E.C.H.); Yedingham (G.B.W.); Goathland (H.B.).

LORDITHON Thomson. C. G.

trinotatus (Er.)—Common and widely distributed.

thoracicus (Fabr.)—Common.

lunulatus (L.)—Common.

BOLITOBIUS Samouelle

analis (Payk.)—Uncommon; West Ayton (W.C.H.); Scarborough (R.L.); Raincliffe Wood (E.C.H.).

cingulatus (Mann.)—Rare; Scarborough (R.L., E.C.H.).

inclinans (Grav.)—Scarborough (R.L.).

CONOSOMUS Motschulsky

testaceus (Fabr.)—Common.

immaculatus (Steph.)—Rare; Sleights (H.B.).

pedicularius (Grav.) var. *lividus* (Er.)—Common.

TACHYPORUS Gravenhorst

nitidulus (Fabr.)—Fairly common.

pusillus Grav.—Common.

transversalis Grav.—Local and rare; Scarborough (R.L.); Yedmandale (G.B.W.).

atriceps Steph.—Local; Scarborough (G.B.W.).

tersus Er.—Rare; Beckhole, Sleights (H.B.).

chrysomelinus (L.)—Very common.

scutellaris Rye—Langdale End (H.C.H.); Raincliffe Wood (E.C.H.).

hypnorum (Fabr.)—Very common.

solutus Er.—Raincliffe Wood, Filey, Yedmandale (E.C.H.).

formosus Matth., A. H.—Rare; Scalby Beck (C.E.S.).

obtusus (L.)—Very common.

var. *nitidicollis*—Common near Scarborough.

LAMPRINODES Luze

saginata (Grav.)—Very local; Scarborough (R.L., C.E.S.).

TACHINUS Gravenhorst

lignorum (L.)—Raincliffe Wood in carrion traps (G.B.W.).

proximus Kraatz—Thornton-le-Dale (M.L.T.); Helwath Beck (H.B.).

humeralis Grav.—Common and widely distributed.

subterraneus (L.)—Common.

rufipes (De G.)—Common.

laticollis Grav.—Raincliffe Wood (E.C.H.).

marginellus (Fabr.)—Common.

corticinus Grav.—Common.

rufipennis Gyll.—Raincliffe Wood in carrion traps (G.B.W.).

elongatus Gyll.—With the last, fairly common in the spring (G.B.W.).

LEUCOPARYPHUS Kraatz

silphoides (L.)—Common in manure heaps.

HYPOCYPTUS Mannerheim

longicornis (Payk.)—Common.

laeviusculus Mann.—Local; Seamer Moor (G.B.W.).

seminulum Er.—Rare; Cornelian Bay (C.E.S.).

GYMNUSA Karsten

brevicollis (Payk.)—Very local; Scarborough (R.L.); abundant at Sleights (H.B.).

variegata Kies.—Very local; Ringing Keld Bog (R.L.).

MYLLAENA Erichson

intermedia Er.—Rare; Burniston in cut grass (G.B.W.).

graeca Kr.—Very rare; the British status of this insect rests on five specimens taken at Scarborough many years ago (T.W.), probably on the coast.

kraatzii Sharp—Very local; Scarborough (R.L.).

elongata (Matth., A. H.)—Very local; Scarborough (R.L., C.E.S.).

brevicornis (Matth., A. H.)—Local; Thornton-le-Dale, Hayburn Wyke (G.B.W.); Sleights (H.B.).

OLIGOTA Mannerheim

apicata Er.—Scarborough (W.W.F.).

inflata Mann.—Widely distributed.

atomaria Er.—Very local; Saltergate in shippen refuse (H.B.).

pusillima (Grav.)—Scarborough (R.L.).

ENCEPHALUS Stephens

complicans Westw.—Not common; Scarborough (R.L.); Sherburn flood-refuse (G.B.W.).

GYROPHAENA Mannerheim

affinis Sahlb., C. R.—Goathland (H.B.).

gentilis Er.—Scarborough (R.L.).

fasciata (Marsham)—Fylinghall (W.J.F.).

lucidula Er.—Scarborough (R.L.).

strictula Er.—Very local and rare; Scarborough (T.W.).

AGARICOCHARA Kraatz

latissima (Steph.)—Scarborough, by beating old trees, abundant (R.L.).

HOMALOTA Mannerheim

plana (Gyll.)—Sleights (H.B.).

THECTURA Thomson, C. G.

cuspidata (Er.)—Scarborough (R.L.); Sleights (H.B.).

PHYTOSUS Curtis

spinifer Curt.—Scarborough, 1 specimen among sea-weed at base of cliffs (H.J.B.).

LEPTUSA Kraatz

fumida (Er.)—Fairly common.

ruficollis (Er.)—Fairly common.

BOLITOCHARA Mannerheim

lucida (Grav.)—Scarborough (R.L.).

obliqua Er.—Raincliffe Wood (W.C.H.); Goathland, Sleights (H.B.).

AUTALIA Samouelle

impressa (Oliv.)—Common.

rivularis (Grav.)—Common.

CORDALIA Jacobs*obscura* (Grav.)—Fairly common.**FALAGRIA** Samouelle*sulcata* (Payk.)—Common.**MYRMECOPORA** Saulcy*sulcata* (Kies.)—Cornelian Bay (T.W.).**TACHYUSA** Erichson*atra* (Grav.)—Scarborough (R.L.); Scalby Beck (G.B.W.).*leucopus* (Marsham)—Fairly common.*umbratica* Er.—Ravenscar, in moss (G.B.W.).*constricta* Er.—Forge Valley (H.C.H.); Scarborough (R.L.).**GNYPETA** Thomson, C. G.*carbonaria* (Mann.)—Fairly common and widely distributed.*coerulea* (Sahlb.. C.R.)—Rare; Scalby Beck (W.H.).**CALLICERUS** Gravenhorst*obscurus* Grav.—Scarborough (R.L.); Filey (E.C.H.).**AMISCHA** Thomson, C. G.*analis* (Grav.)—Common.*cavifrons* Sharp—Rare; Sherburn flood-refuse (G.B.W.).**NOTOTHECTA** Thomson, C. G.*flavipes* (Grav.)—Barns Cliff, Langdale, common in nests of **Formica***rufa* (G.B.W.); Helwath Beck (H.B.).*anceps* (Er.)—With the last, but not so common.**SIPALIA** Mulsant & Rey*circellaris* (Grav.)—Common.**ATHETA** Thomson, C. G.**S. HYDROSMECTA** Thomson, C. G.*delicatula* (Sharp)—Rare; Scarborough (R.L.).*fragilis* (Kr.)—Rare; Scarborough (R.L.).**S. DILACRA** Thomson, C. G.*luteipes* (Er.)—Cornelian Bay, on damp ground (C.E.S.).**S. GLOSSOLA** Fowler*gregaria* (Er.)—Common.**S. ALOCONOTA** Thomson, C. G.*currax* (Kr.)—Not uncommon; Hilla Green (G.B.W.); Scalby Beck (G.B.W., C.E.S.).*cambrica* (Woll.)—Hilla Green, not uncommon in shingle (G.B.W.).*sulcifrons* (Steph.)—Forge Valley, in moss (G.B.W.).*insecta* (Thoms., C. G.)—Filey (E.C.H.).**S. AGAPHYGRA** Tottenham*luridipennis* (Mann.)—Scarborough (C.E.S.).**S. BRUNDINIA** Tottenham*gyllenhali* (Thoms., C. G.)—Yedingham flood-refuse (G.B.W.).*vaga* (Heer)—Common.*tomlini* Joy—Cornelian Bay (C.E.S.).*malleus* Joy—Sherburn flood-refuse (G.B.W.).*elongatula* (Grav.)—Common.*hygrotopora* (Kr.)—Scarborough (C.E.S.).

- curtipennis* (Sharp)—Yedingham flood-refuse (G.B.W.).
islandica (Kr.)—Sherburn flood-refuse (G.B.W.); Scarborough (C.E.S.).
eximia (Sharp)—Scarborough (R.L.).
- S. HYGROECIA** Mulsant & Rey
debilis (Er.)—Scarborough (R.L.); common in R. Derwent flood-refuse (G.B.W.).
britteni Joy—Abundant in R. Derwent flood-refuse (G.B.W.).
- S. PARAMEOTICA** Ganglbauer
complanata (Mann.)—Scarborough (R.L.).
- S. DRALICA** Mulsant & Rey
rigua Will.—Yedingham flood-refuse, rare (G.B.W.).
- S. OUSIPALIA** Des Gozis
caesula (Er.)—Givendale, in fungi (G.B.W.).
- S. HALOBRECTA** Thomson, C. G.
flavipes Thoms., C. G.—Scarborough, among rotting sea-weed (G.B.W.).
- S. DINARAEA** Thomson, C. G.
aequata (Er.)—Cornelian Bay, Forge Valley (G.B.W.).
- S. PLATARAEA** Thomson, C. G.
brunnea (Fabr.)—Flixton, Hayburn Wyke (G.B.W.).
- S. ENALODROMA** Thomson, C. G.
hepatica (Er.)—Rare; Levisham (M.L.T.).
- S. BESSOBIA** Thomson, C. G.
fungivora Thoms., C. G.—Scarborough (C.E.S.); Raincliffe Wood (G.B.W.).
excellens (Kr.)—Scarborough (G.B.W.).
monticola (Thoms., C. G.)—Cornelian Bay, in rabbit dung (C.E.S.).
- S. ANOPLETA** Mulsant & Rey
corvina (Thoms., C. G.)—Givendale, Raincliffe Wood, in fungi (G.B.W.).
- S. TRAUMOECIA** Mulsant & Rey
angusticollis (Thom., C. G.)—Fairly common.
- S. PHILHYGRA** Mulsant & Rey
palustris (Kies.)—Not uncommon in damp places near Scarborough (G.B.W., C.E.S.).
- S. MICRODOTA** Mulsant & Rey
mortuorum Thoms., C. G.—Sherburn flood-refuse (G.B.W.).
amicula (Steph.)—Common.
- S. ATHETA** s.s. (Ganglbauer)
nigricornis (Thoms., C. G.)—Raincliffe Wood (G.B.W.).
gagatina (Baudi)—Langdale End, in fungi (G.B.W.).
sodalis (Er.)—Givendale, in fungi (G.B.W.); Goathland (H.B.).
pallidicornis (Thoms., C. G.)—Scarborough, in cut grass (G.B.W.).
fungicola (Thoms., C. G.)—Goathland (H.B.).
inoptata (Sharp)—Common near Scarborough (G.B.W.).
crassicornis (Fabr.)—Raincliffe Wood, Langdale End, common in fungi (G.B.W.).

- hybrida* (Sharp)—Sleights (H.B.).
trinotata (Kr.)—Common.
triangulum (Kr.)—Common.
britanniae Bernh.—Sleights, Helwath Beck (H.B.).
S. HYPATHETA Fenyès
aquatica (Thoms., C. G.)—Raincliffe Wood (G.B.W.).
pertyi (Heer)—Common.
castanoptera (Mann).—Fairly common.
aquatilis Thoms., C. G.—Hayburn Wyke, Forge Valley (C.E.S.).
S. LIOGLUTA Thomson, C. G.
hypnorum (Kies.)—Sleights (H.B.).
pagana (Er.)—Scarborough (R.L.); Yedingham flood-refuse (G.B.W.).
longiuscula (Grav.)—Common.
oblongiuscula (Sharp)—Raincliffe Wood (G.B.W.).
S. MEGISTA Mulsant & Rey
graminicola (Grav.)—Common.
S. THINOBAENA Thomson, C. G.
vestita (Grav.)—Common on the shore.
S. DIMETROTA Mulsant & Rey
atramentaria (Gyll.)—Common.
cinnamoptera (Thoms., C. G.)—Sleights, Goathland (H.B.).
marcida (Er.)—Givendale, in fungi (G.B.W.).
S. DATOMICRA Mulsant & Rey
arenicola Thoms., C. G.—Common.
zosteræ (Thoms., C. G.)—Generally distributed.
S. CHAETIDA Mulsant & Rey
longicornis (Grav.)—Common.
S. COPROTHASSA Thomson, C. G.
melanaria (Mann.)—Scarborough (R.L.); Ravenscar (W.J.F.).
sordida (Marsham)—Common.
S. ACROTONA Thomson, C. G.
aterrima (Grav.)—Common.
muscorum (Bris.)—Common.
fungi (Grav.)—Common.
clientula (Er.)—Robin Hood's Bay, Goathland, frequent in moss (H.B.).
S. AMIDOBIA Thomson, C. G.
talpa (Heer)—Barns Cliff, Langdale, Silpho Moor, common in nests of *Formica rufa* (G.B.W.); Helwath Beck (H.B.).
ALIANITA Thomson, C. G.
incana (Er.)—Scarborough (R.L.).
THAMIARAEA Thomson, C. G.
hospita (Maerk.)—Scarborough (R.L.).
DRUSILLA Samouelle
canaliculata (Fabr.)—Common.
ZYRAS Stephens
humeralis (Grav.)—Cloughton (E.C.H.); Barns Cliff, in nests of *Formica rufa*, rare (G.B.W.).

TINOTUS Sharp*morion* (Grav.)—Common.**PHLOEOPORA** Erichson*testacea* (Mann.)—Common.**ILYOBATES** Kraatz*nigricollis* (Payk.)—Scarborough (T.W.).**CALODERA** Mannerheim*nigrita* Mann.—Scarborough (R.L.).*aethiops* (Grav.)—Very rare; Scarborough (R.L.).*riparia* Er.—Very rare; Scarborough (R.L.).**CHILOPORATA** Strand, E.*longitarsis* (Er.)—Not uncommon near Scarborough (G.B.W.).*rubicunda* (Er.)—Rare; Scarborough (R.L.).**OCALEA** Erichson*picata* (Steph.)—Widely distributed round Scarborough; quite common in carrion traps in Raincliffe Wood (G.B.W.).*rivularis* Mill., L.—Scarborough (W.H.); Raincliffe Wood, in carrion traps (G.B.W.).*badia* Er.—Forge Valley (C.E.S.).**DINARDA** Samouelle*dentata* (Grav.)—Helwath Beck (H.B.).*markeli* Kies.—Raincliffe Wood, sweeping (E.C.H.); Helwath Beck, Barns Cliff, not uncommon in *Formica rufa* nests (G.B.W., H.B.).**MEOTICA** Mulsant & Rey*exilis* (Er.)—Scarborough (R.L.).*pallens* (Redt.)—Scarborough (R.L.).**OCYUSA** Kraatz*incrassata* (Muls. & Rey)—Near Sleights (H.B.).**OXYPODA** Mannerheim*spectabilis* Maerk.—Usually rare; but not uncommon in carrion traps in Raincliffe Wood (G.B.W.).*lividipennis* Mann.—Raincliffe Wood, in carrion traps and moss (G.B.W.).*opaca* (Grav.)—Generally distributed.*longiuscula* (Grav.)—Fairly common and widely distributed.*umbra* (Gyll.)—Scalby Beck (C.E.S.).*exigua* Er.—Rare; Yedingham flood-refuse (G.B.W.).*alternans* (Grav.)—Fairly common.*haemorrhoea* Mann.—Barns Cliff, Silpho Moor, common in nests of *Formica rufa* (G.B.W.); Helwath Beck (H.B.).*formiceticola* Maerk.—Common with the last.*annularis* Mann.—Local and rare; Scarborough (R.L.); Forge Valley (G.B.W.).**ISCHNOGLOSSA** Kraatz*corticina* (Er.)—Rare; Filey (E.C.H.).**THIASOPHILA** Fairmaire & Laboulbène*angulata* (Er.)—Barns Cliff, Langdale, Silpho Moor, common in nests of *Formica rufa* (G.B.W.); Helwath Beck (H.B.).

CRATARAEA Thomson, C. G.*suturalis* (Mann.)—Beckhole (H.B.).**MICROGLOTTA** Kraatz*puncticollis* (Steph.)—Common in nests of small birds; Scarborough (R.L.); Scalby, Thornton-le-Dale (G.B.W.); Wykeham (C.E.S.).**ALEOCHARA** Gravenhorst*curtula* (Goeze)—Common and generally distributed.*moesta* Grav.—Fairly common.*sparsa* Heer—Common.*lanuginosa* Grav.—Common and generally distributed.*villosa* Mann.—Scarborough, in pigeon-cotes (R.L., G.B.W.).*spadicea* Er.—Not uncommon; Scalby Beck (R.L.); 2 in wasps' nests, Forge Valley (A.E.W. and G.B.W.); Cloughton (W.J.F.); in moles' nests, Sherburn (G.B.W.).*ruficornis* Grav.—Rare; Scarborough (R.L.); Raincliffe Wood in carrion traps (G.B.W.); Ravenscar (M.L.T.).*bilineata* Gyll.—Scarborough (C.E.S.).*bipustulata* (L.)—Common.*algarum* Fauv.—Common in rotting sea-weed.*obscura* Grav.—With the last.**PSELAPHIDAE****TRIMIUM** Aubé*brevicorne* (Reich.)—Scarborough, in some numbers on North Cliff in moss (T.W. and R.L.).**EUPLECTUS** Leach*duponti* Aubé—Scalby Beck, about 30 specimens in rotten alder stump (R.L.).*bescidicus* Reitt.—Scarborough, under fir and elm bark (R.L.).*piceus* Motsch.—Possibly Scarborough (T.W.), specimens from him were in Dr. P. B. Mason's collection.*sanguineus* Denny—Common in stack-bottoms; Scarborough, Forge Valley (E.C.H., G.B.W.).**BIBLOPORUS** Thomson, C. G.*bicolor* (Denny)—Scarborough, abundant under bark in Raincliffe Wood (R.L.); Forge Valley (W.D.H.).**TRICHONYX** Chaudoir*sulcicollis* (Reich.)—In plenty in moss on the North Cliff, Scarborough (R.L.).**REICHENBACHIA** Leach*impressa* (Panz.)—Forge Valley (H.C.H.); Thornton-le-Dale (E.C.H.).*juncorum* (Leach)—Common.**BRYAXIS** Kugelann*puncticollis* (Denny)—Widely distributed and fairly common.*bulbifera* (Reich.)—Common.*curtisii* (Leach)—Scarborough (R.L.).*macropalpus* (Aubé)—Rare; Scarborough (R.L.).*burrellii* (Denny)—Scarborough (R.L.); Scalby (G.B.W.).

TYCHUS Leach**niger** (Payk.)—Common.var. **dichrous** Schm.-Goeb.—Rare; Yedingham flood-refuse (G.B.W.).**PSELAPHUS** Herbst**heisei** Herbst—Scarborough North Cliff, in moss (R.L.); Ringing Keld Bog (E.C.H.).

CLAVIGERIDAE

CLAVIGER Preyssler**testaceus** Preyssl.—Robin Hood's Bay, 2 specimens with **Lasius flavus** (T.S.).

HISTERIDAE

ONTHOPHILUS Leach**striatus** (Forst.)—Fairly common.**ABRAEUS** Leach**globosus** (Hoffm., J. J.)—Scarborough, in rotten ash stumps (R.L.).**ACRITUS** Leconte**nigricornis** (Hoffm., J. J.)—Scarborough, in stack-bottoms near the Mere (R.L.).**SAPRINUS** Erichson**semistriatus** (Scriba)—Common.**aeneus** (Fabr.)—Hackness (E.C.H.).**rugifrons** (Payk.)—Forge Valley, not uncommon (W.C.H.).**GNATHONCUS** du Val[**rotundatus** (Kug.)] var. **nannetensis** Mars.—Forge Valley (W.C.H.).**MYRMETES** Marseul**piceus** (Payk.)—Barns Cliff, in nests of **Formica rufa** (G.B.W.); Helwath Beck (H.B.).**CARCINOPS** Marseul**quattuordecimstriata** (Steph.)—Not scarce in bones at the bone-mill, Scarborough (R.L.).**MICROLOMALUS** Lewis, G.**flavicornis** (Herbst)—Scarborough (R.L.).**HISTER** Linnaeus**unicolor** (L.)—Raincliffe Wood (E.C.H.).**striola** Sahlb., C. R.—Fairly common and widely distributed.**cadaverinus** Hoffm., J. J.—Common.**carbonarius** Hoffm., J. J.—Scarborough (R.L.).**marginatus** Er.—Rare; Raincliffe Wood, 2 in moles' nest (G.B.W.).**bimaculatus** (L.)—Scarborough (R.L., W.P.).**duodecimstriatus** Schr.—Scarborough (E.C.H.); Yedingham flood-refuse (G.B.W.).

LYCIDAE

* **DICTYOPTERUS** Latreille**affinis** (Payk.)—Rare; 2 spns. under spruce bark in Raincliffe Wood (A.M.R.).**PLATYCIS** Thomson, C. G.**minuta** (Fabr.)—Scarborough (R.L.); Forge Valley (W.C.H.).

LAMPYRIDAE

LAMPYRIS Geoffroy

noctiluca (L.)—Local and gradually diminishing in numbers; Cloughton, Broxa (G.B.W.); Thornton le-Dale (H.C.H.); High Givendale (S.R.).

CANTHARIDAE

PODABRUS Westwood

alpinus (Payk.)—Common and generally distributed. The varieties **nitens** (Fabr.) and **enteralis** Er. occur with the type.

CANTHARIS Linnaeus

[**abdominalis** Fabr.] var. **cyanea** Curt.—Uncommon and local, but occurs in many wooded valleys, e.g. Hayburn Wyke, Beedale, Fylingdales.

rustica Fall.—Fairly common.

nigricans (Muell., O. F.)—Common, especially the var. **discoidea** (Steph.).

pellucida Fabr.—Common.

livida (L.)—Common.

rufa (L.)—Rather local; Yedmandale (E.C.H.).

pallida Goeze—Common.

cryptica Ashe—Raincliffe Wood, Hayburn Wyke (G.B.W.).

fulvicollis Fabr.—Robin Hood's Bay (H.B.); Scarborough (R.L.).

paludosa Fall.—Local but fairly common in damp places; Forge Valley (G.B.W.); Goathland, Robin Hood's Bay (H.B.).

METACANTHARIS Bourgeois

clypeata (Ill.)—Common.

RHAGONYCHA Eschscholtz

translucida Kryn.—Not common; Yedmandale (E.C.H.); Robin Hood's Bay (W.J.F.).

lutea (Muell., O. F.)—Local; Littlebeck (M.L.T.); Goathland (R.R.U.K.).

fulva (Scop.)—Very common in July.

testacea (L.)—Not uncommon and widely distributed.

limbata Thoms., C. G.—Common.

lignosa (Muell., O.F.)—Common.

MALTHINUS Latreille

flaveolus (Payk.)—Fairly common.

MALTHODES Kiesenwetter

marginatus (Latr.)—Common.

mysticus Kies.—Local; Langdale End (M.L.T.); Raincliffe Wood (G.B.W.); Helwath Beck (H.B.).

minimus (L.)—Common.

flavoguttatus Kies.—Helwath Beck (H.B.); Forge Valley (G.B.W.).

dispar (Germ.)—Forge Valley (G.B.W.).

[**maurus** (Cast.)] a. **misellus** Kies.—Forge Valley (G.B.W.).

fibulatus Kies.—Forge Valley (G.B.W.).

pumilus (Bréb.)—Rare; Scarborough (G.B.W.).

MALACHIIDAE

MALACHIUS Fabricius**bipustulatus** (L.)—Very local; Forge Valley (G.B.W.).

DASYTIDAE

DASYTES Paykull**aerosus** Kies.—Not common, but widely distributed.**PHLOIOPHILUS** Stephens**edwardsii** Steph.—Raincliffe Wood in abundance, by beating oaks (R.L.).

CLERIDAE

OPILO Latreille**mollis** (L.)—Rare; 1 spn. under spruce bark in Raincliffe Wood (A.M.R.).**THANASIMUS** Latreille**formicarius** (L.)—Raincliffe Wood, under oak bark (R.L.); Hayburn Wyke, in dead ash (T.W.); in dead fallows (G.B.W.).**NECROBIA** Olivier**ruficollis** (Fabr.)—Scarborough (R.L.).**violacea** (L.)—Hole of Horcum (H.B.).**rufipes** (De G.)—Seamer Moor, Flixton (G.B.W.); Scarborough (W.C.H.); Goathland (R.R.U.K.).

ELATERIDAE

ADELOCERA Latreille**murina** (L.)—Local; Flixton sand-pits (G.B.W.); Forge Valley (E.C.H.).**ELATER** Linnaeus**balteatus** (L.)—Local but widely distributed: Cross Cliff (R.L.); Langdale End (W.C.H.); Ellerdale (W.P.); Hole of Horcum, Helwath Beck (H.B.).**HYPNOIDUS** Stephens**riparius** (Fabr.)—Common.**quadripustulatus** (Fabr.)—Fairly common in cut grass at Scalby (G.B.W.).**dermestoides** (Herbst)—Scarborough (R.L.).var. **quadriguttatus** Cast.—Scarborough, much commoner than type (R.L.); Filey (E.C.H.).**MELANOTUS** Eschscholtz**rufipes** (Herbst)—Not common; Raincliffe Wood (E.C.H., G.B.W.); Langdale End, Beedale (G.B.W.).**LIMONIUS** Eschscholtz**aeruginosus** (Ol.)—Not common; Langdale End (W.C.H.).**minutus** (L.)—Local; Littlebeck (M.L.T.); Langdale End (G.B.W.); Yedmandale (E.C.H.); Robin Hood's Bay (H.B.).**ATHOUS** Eschscholtz**hirtus** (Herbst)—Local; Langdale End (M.L.T.); Forge Valley (W.C.H., E.C.H.); Seamer, injurious to barley (A.E.W.), etc.**vittatus** (Fabr.)—Fairly common.**haemorrhoidalis** (Fabr.)—Very common.

bicolor (Goeze)—Rare; Staintondale (G.B.W.).

CORYMBITES Latreille

pectinicornis (L.)—Uncommon; Scarborough (W.P.); Goathland (G.B.W.).

cupreus (Fabr.)—Common and widely distributed.

var. **aeruginosus** (Fabr.)—With the type but much less common; Hackness (G.B.W.); Goathland (R.R.U.K.); Gristhorpe Bay (G.B.W.).

siaelandicus (Muell., O.F.)—Local; Pickering (Y.N.U. Excn., 1938); Goathland (R.R.U.K.).

aeneus (L.)—Uncommon; Hackness (E.C.H.); Ebberston (W.P.).

incanus (Gyll.)—Common.

var. **ochropterus** (Steph.)—With the type but much less common; Langdale End, Lowdales (E.C.H.); Flixton (G.B.W.).

PROSTERNON Latreille

tessellatum (L.)—Dalby Warren (E.C.H.); Sleights (H.B.).

AGRIOTES Eschscholtz

acuminatus (Steph.)—Local; Filey (E.C.H.); Hole of Horcum (H.B.).

pallidulus (Ill.)—Common.

sputator (L.)—Local; Filey, Seamer Moor (E.C.H.); Forge Valley (G.B.W.).

lineatus (L.)—Less common than **obscurus**, but widely distributed.

obscurus (L.)—Common.

DALOPIUS Eschscholtz

marginatus (L.)—Common.

SERICUS Eschscholtz

brunneus (L.)—Rare; Scarborough (E.G.B.); Staintondale, Saltergate (G.B.W.).

ADRASTUS Eschscholtz

nitidulus (Marsham)—Common.

rachifer (Geoffr. in Fourcr.)—Seamer, common (A.E.W.).

DENTICOLLIS Piller & Mitterpacher

linearis (L.)—Common.

EUCNEMIDAE

DIRHAGUS Castelnau

pygmaeus (Fabr.)—Swept from bracken at Pickering (A.S.).

TRIXAGIDAE

TRIXAGUS Kugelann

dermestoides (L.)—Common; Scarborough (R.L.); Forge Valley (G.B.W.); Pickering (M.D.B.).

BUPRESTIDAE

APHANISTICUS Latreille

pusillus (Ol.)—Rare; Scarborough, 1 specimen in Harper's Field (R.L.).

TRACHYS Fabricius

troglodytes Schoenh.—Rare; Scarborough (R.L.).

DASCILLIDAE

DASCILLUS Latreille

cervinus (L.)—Rather local; Filey (W.J.C.); Ayton (W.C.H.); Scarborough (W.P.).

EUBRIA Germar

palustris Germ.—Cornelian Bay, abundant in moss (R.L.).

HELODIDAE

HELODES Latreille

minuta (L.)—Common.

marginata (Fabr.)—Rather local; but widely distributed.

MICROCARA Thomson, C. G.

testacea (L.)—Common.

bohemani (Mann.)—Local; Thornton-le-Dale (G.B.W.).

CYPHON Paykull

variabilis (Thunb.)—Common.

var. *nigriceps* Kies.—Biller Howe Dale (G.B.W.).

ochraceus Steph.—Biller Howe Dale, Raincliffe Wood (G.B.W.); Fylingdales Moor (H.B.).

coarctatus Payk.—Common.

paykulli Guér.-Mén.—Rather common and widely distributed.

PRIONOCYPHON Redtenbacher

serricornis (Muell., P. W. J.)—Scarborough in ants' nests (T.W.).

HYDROCYPHON Redtenbacher

deflexicollis (Muell., P.W.J.)—Not common, but widely distributed; Langdale End (M.L.T., W.C.H.); Helwath Beck (H.B.); Goathland (R.R.U.K.).

SCIRTES Illiger

hemisphaericus (L.)—Very local; Scarborough (R.L.).

DRYOPIDAE

DRYOPS Olivier

ernesti Des Gozis—Common.

auriculatus (Geoffr. in Fourcr.)—Common.

HELICHUS Erichson

substriatus (Muell., P.W.J.)—Not common; Forge Valley on floating chips (R.L.); Scalby Beck, in moss on timber (R.L.).

ELMIS Latreille

[*maugei* Bed. s. *megerlei* Dufts.] ab. *aenea* Muell., P. W. J.—Very common.

ESOLUS Mulsant & Rey

parallelipedus (Muell., P. W. J.)—Fairly common.

LIMNIUS Illiger

tuberculatus Muell., P. W. J.—Fairly common.

RIOLUS Mulsant & Rey

cupreus (Muell., P.W.J.)—Rare; Scarborough (R.L.); West Ayton (W.C.H.); Langdale End (E.C.H.).

nitens (Muell., P. W. J.)—Rare; Scarborough (W.C.H.).

LATELMIS Reitter

volckmari (Panz.)—Common.

GEORISSIDAE

GEORISSUS Latreille

crenulatus (Rossi)—Scarby Beck, abundant in flood-refuse (R.L.).

HETEROCERIDAE

HETEROCERUS Fabricius

marginatus (Fabr.)—Scarborough (R.L.); West Ayton (W.C.H.);
Scarby Beck (G.B.W.).

DERMESTIDAE

DERMESTES Linnaeus

maculatus De G.—Scarborough, abundant (R.L.).

frischii Kug.—Scarborough (W.W.F.).

undulatus Brahm—Scarborough (R.L.).

lardarius L.—Common, sometimes doing great damage.

ATTAGENUS Latreille

pellio (L.)—Fairly common.

MEGATOMA Herbst

undata (L.)—Rare; Scarborough (G.B.W.).

TROGODERMA Berthold in Latreille

granaria Everts—Scarborough, becoming commoner, in stored foods
(G.B.W.).

BYRRHIDAE

SIMPLOCARIA Stephens

semistriata (Fabr.)—Common.

CYTILUS Erichson

sericeus (Forst.)—Rather common and widely distributed.

BYRRHUS Linnaeus

fasciatus (Forst.)—Local; Seamer (A.E.W.); Hutton Buscel,
Langdale Rigg (W.C.H.); Goathland (H.B.); near the Falcon Inn
(G.B.W.).

pustulatus (Forst.)—Rare; Langdale End (W.C.H.).

pilula L.—Common.

SYNCALYPTA Stephens

setigera (Ill.)—Flixton, 1 at roots (G.B.W.).

OSTOMATIDAE

TENEBROIDES Piller & Mitterpacher

mauritanicus (L.)—Scarborough in flour stores, common (R.L.,
G.B.W.).

THYMALUS Latreille

limbatus (Fabr.)—Very local; Raincliffe Wood (E.C.H.); Forge
Valley (G.B.W.).

BYTURIDAE

BYTURUS Latreille

ochraceus (Scriba)—Very local; Filey (E.C.H.); Pickering
(W.E.S.).

urbanus (Lind.)—Very common.

NITIDULIDAE

KATERETES Herbst

pedicularius (L.)—Local; Forge Valley (G.B.W.).

bipustulatus (Payk.)—Local; Scarborough (R.L.); Forge Valley (G.B.W.); Ebberston (W.P.); Sleights (H.B.). The abs.

ochraceus Murray and *suturalis* Murray occur with the type in Forge Valley (G.B.W.).

rufilabris Latr.—Local, but widely distributed.

BRACHYPTERUS Kugelann

glaber (Steph.)—Fairly common round Scarborough.

urticae (Fabr.)—Very common.

LARIA Scopoli

dulcamarae Scop.—Scarborough (J.H.B.).

MELIGETHES Stephens

brevis Sturm—Forge Valley in some numbers on a limestone hill with *Helianthemum* and other flowers (R.L.); also taken by C.E.S. (1936).

atratus (Ol.)—Levisham (W.C.H.); Scarborough (E.G.B.); Pickering. Hayburn Wyke (G.B.W.).

lumbaris Sturm—Littlebeck (M.L.T.); Hayburn Wyke, Raincliffe Wood (G.B.W.); Robin Hood's Bay (H.B.).

fulvipes Bris.—Raincliffe Wood, Forge Valley, Troutsdale (G.B.W.).

aeneus (Fabr.)—Very common.

viridescens (Fabr.)—Common.

brunnicornis Sturm—Rare; Filey (E.C.H.).

viduatus (Heer)—Primrose Valley, on *Geranium sanguineum* (W.J.F., G.B.W.).

ovatus Sturm—Plentiful with the last.

picipes Sturm—Common.

obscurus Er.—Rare; Scarborough (J.H.B.); Sleights (H.B.).

CARPOPHILUS Stephens

ligneus Murr.—Scarborough in dried figs (E.F.G.).

NITIDULA Fabricius

bipunctata (L.)—Common.

flavomaculata Rossi—Very rare and doubtful as to origin. In rams' horns and in the bone-mill (now disappeared) at Scarborough (R.L.).

OMOSITA Erichson

discoidea (Fabr.)—Common.

colon (L.)—Common.

EPURAEA Erichson

limbata (Fabr.)—Wykeham (E.G.B.).

aestiva (L.)—Common.

melina Sturm—Fairly common and widely distributed.

deleta Sturm—Common.

terminalis (Mann.)—Rare; Raincliffe Wood by beating oaks (R.L., T.W.).

rufomarginata (Steph.)—Rare; with the last.

variegata (Herbst)—Very rare; Scarborough (R.L.).

unicolor (Ol.)—Scarborough (R.L.); Hayburn Wyke (G.B.W.); Sleights (H.B.); Thornton-le-Dale, abundant at sap (W.D.H.).

angustula Sturm—Rare; Raincliffe Wood, in burrows of *Trypodendron domesticus* in dead holly (R.L., T.W.).

pusilla (Ill.)—Fairly common.

florea Er.—Common.

melanocephala (Marsham)—Common.

SORONIA Erichson

punctatissima (Ill.)—Raincliffe Wood, plentiful by beating oaks (R.L.); Forge Valley (G.B.W.).

grisea (L.)—With the last; also Goathland (H.B.).

CYCHRAMUS Kugelann

luteus (Fabr.)—Common, especially on flowers of hogweed.

LIBRODOR Reitter

quadriguttatus (Fabr.)—Langdale End at sap (W.C.H.); Forge Valley by sweeping (W.D.H.).

hortensis (Geoffr. in Fourcr.)—Fairly common.

GLISCHROCHILUS Reitter

quadripunctatus (L.)—Very local; Sleights (H.B.).

PITYOPHAGUS Shuckard

ferrugineus (L.)—Hutton Buscel (E.G.B.).

RHIZOPHAGIDAE

RHIZOPHAGUS (Herbst) Illiger

aeneus Richt.—Very rare; Scalby Beck flood-refuse (R.L.).

depressus (Fabr.)—Very local; Raincliffe Wood (G.B.W.).

ferrugineus (Payk.)—East Ayton, common under bark of faggots, Forge Valley, Raincliffe Wood (G.B.W.); Scarborough (C.E.S.).

Mr. E. A. Newbery said that all our specimens are the var. **minor** Mécq.

parallelocollis Gyll.—Local; West Ayton, in old hawthorn stumps (W.C.H.); Hutton Buscel (E.G.B.); Forge Valley (E.C.H.).

bipustulatus (Fabr.)—Common.

dispar (Payk.)—Common.

oblongicollis Blatch—Scarborough, Langdale End (E.C.H.).

nitidulus (Fabr.)—Scarborough, Raincliffe Wood (E.C.H.); Hutton Buscel (E.G.B.).

cribratus Gyll.—Rare; Scarborough (R.L.).

CUCUJIDAE

MONOTOMA Herbst

quadrifoveolata Aubé—Scarborough, in a flour-mill, not scarce (R.L.).

conicicollis Aubé—Barns Cliff, abundant in nests of *Formica rufa* (G.B.W.); Helwath Beck (H.B.).

angusticollis Gyll.—With the last.

picipes Herbst—Common.

longicollis Gyll.—Scarborough, abundant in stack bottoms (R.L.); Robin Hood's Bay (H.B.).

ORYZAEPHILUS Ganglbauer

surinamensis (L.)—Scarborough, in a flour-mill, plentiful (R.L.); in a grocer's shop (G.B.W.).

LAEMOPHLOEUS Castelnau

ferrugineus (Steph.)—Scarborough, plentiful in flour-mill (R.L.).

EROTYLIDAE

TRIPLAX Herbst

aenea (Schall.)—Rare; Scarborough (R.L.); Forge Valley (G.B.W.); Newton Dale, 17/4/53 (A.M.R.).

DACNE Latreille

rufifrons (Fabr.)—Raincliffe Wood on dry fungus (R.L.); Forge Valley (W.C.H.); Goathland (H.B.).

CRYPTOPHAGIDAE

TELMATOPHILUS Heer

caricis (Ol.)—Scarborough (R.L.); Seamer, West Ayton (W.C.H.).

typhae (Fall.)—Scarborough (R.L.).

PARAMECOSOMA Curtis

melanocephalum Herbst—Scalby Beck, abundant in flood-refuse (R.L.).

HENOTICUS Thomson, C. G.

serratus (Gyll.)—Scarborough, beaten out of holly (R.L.).

MICRAMBE Thomson, C. G.

villosa (Heer)—Abundant.

CRYPTOPHAGUS (Herbst) Paykull

pubescens Sturm—Rare; Scarborough (R.L.), in wasps' nest (G.B.W.).

lapponicus Gyll.—Very rare; Scarborough (R.L.).

scanicus (L.)—Common.

dentatus (Herbst)—Common.

pallidus Sturm—Rare; Seamer Moor (G.B.W.).

scutellatus Newm.—Robin Hood's Bay, very abundant at foot of old haystack, Saltergate (H.B.).

umbratus Er.—Beckhole (H.B.); Filey in nest of field-mouse (E.C.H.).

distinguendus Sturm—Scarborough in pigeon-cote (G.B.W.).

badius Sturm—Scarborough with the last (G.B.W.); Sleights Littlebeck (H.B.).

cellaris (Scop.)—Common.

laticollis Lucas, H.—Beckhole (H.B.).

lycoperdi (Scop.)—Sleights, in *Scleroderma vulgare* (H.B.).

setulosus Sturm—Sleights (H.B.).

ANTHEROPHAGUS Latreille

nigricornis (Fabr.)—Widely distributed, but only in small numbers.

pallens (Fabr.)—Cloughton Moor (M.L.T.); Ellerbeck, Goathland, Scarborough (in nest of *Bombus terrestris*) (G.B.W.).

CAENOSCELIS Thomson, C. G.

ferruginea (Sahlb., C. R.)—Rare; Forge Valley, in moss at roots of ash (T.W.).

ATOMARIA Stephens*impressa* Er.—Scalby Beck, abundant in flood refuse (R.L.).*munda* Er.—Scarborough (R.L.).*mesomela* (Herbst)—Filey (M.L.T.); Scarborough, abundant in rushes at the Mere (R.L.); Ringing Keld Bog (E.C.H.); flood-refuse, Yedingham (G.B.W.).*nitidula* Heer—Raincliffe Wood, Ringing Keld Bog (E.C.H.).*fuscata* (Schoenh.)—Common.*atricapilla* Steph.—Common.*bicolor* Er.—Common.*peltata* Kr.—Rare; Scarborough (R.L.).*fuscipes* (Gyll.)—Common.*pusilla* (Payk.)—Fairly common and widely distributed.*?versicolor* Er.—R. Lawson recorded this from Scarborough, but E. A. Newbery (E.M.M. 1917, p. 126) says all British reputed examples of this species were wrongly identified; probably *morio* Kol.*apicalis* Er.—Scarborough, in cut grass, not uncommon (G.B.W.); Saltergate (H.B.).*ruficornis* (Marshall)—Local; Scarborough (C.E.S.); Robin Hood's Bay, Beckhole, Saltergate (H.B.).*analis* Er.—Common.*gibbula* Er.—Scarborough, in wet moss on the moors, not plentiful (R.L.).*umbrina* (Gyll.)—Scarborough (R.L.).*nigriventris* Steph.—Very local; Scarborough (R.L.).*linearis* Steph.—Local; Forge Valley (sweeping), Sherburn, Yedingham in flood-refuse (G.B.W.).*alpina* Heer—Rare; Scarborough, in stack-bottoms at the Mere (R.L.).*finetarii* (Herbst)—Scarborough (R.L.); Flamborough (T.V.W.).**OOTYPUS** Ganglbauer*globosus* (Waltl)—Rare; Scarborough (R.L.).**EPHISTEMUS** Stephens*globulus* (Payk.)—Common.**PHALACRIDAE****PHALACRUS** Paykull*coruscus* (Panz.)—Very local; Scarborough (R.L.).*substriatus* Gyll.—Rare; Ringing Keld Bog in wet moss (R.L.).

During the last week of July and the first week of August, in numbers on bog asphodel at the top of Cloughton Bank.

LATHRIDIIDAE**LATHRIDIUS** Herbst*lardarius* (De G.)—Very common.*nodifer* Westw.—Very common.*bergrothi* Reitt.—Scarborough (G.B.W.).**ENICMUS** Thomson, C. G.*minutus* (L.)—Very common.

transversus (Oliv.)—Very common.

histrio Joy—Common and generally distributed.

testaceus (Steph.)—Filey (E.C.H.).

CARTODERE Thomson, C. G.

filiformis (Gyll.)—Very rare; Scarborough (R.L.).

ruficollis (Marsham)—Local; Scarborough (R.L.); West Ayton (G.B.W.); Beckhole, Saltergate (H.B.).

CORTICARIA Marsham

pubescens (Gyll.)—Uncommon.

crenulata (Gyll.)—West Ayton (W.C.H.).

serrata (Payk.)—Filey (E.C.H.); Scalby (G.B.W.).

elongata (Gyll.)—Common.

ferruginea Marsham—Sawdon Dale (G.B.W.).

CORTICARINA Reitter

gibbosa (Herbst)—Common.

similata (Gyll.)—Sleights (H.B.).

fuscata (Gyll.)—Common.

MYCETOPHAGIDAE

PSEUDOTRIPHYLLUS Reitter

suturalis (Fabr.)—Local; Scarborough (R.L.); Seamer (W.C.H.).

TRIPHYLLUS Latreille

bicolor (Fabr.)—Very local; Scarborough (R.L.).

LITARGUS Erichson

connexus (Geoffr. in Fourcr.)—Raincliffe Wood (K.M., G.B.W.).

MYCETOPHAGUS Hellwig

quadripustulatus (L.)—Fairly common.

TYPHAEA Stephens

stercorea (L.)—Common.

COLYDIIDAE

ANOMMATUS Wesmael

duodecimstriatus (Muell., P. W. J.)—Rare; Scarborough, in stack bottom at the Mere (R.L.).

CERYLON Latreille

histeroides (Fabr.)—Widely distributed but not common.

ferrugineum Steph.—Very local; Sawdon Dale, common under bark (G.B.W.).

ENDOMYCHIDAE

MYCETAEA Stephens

hirta (Marsham)—Local; Scarborough in stack bottoms (R.L.); Beckhole (H.B.).

ENDOMYCHUS Panzer

coccineus (L.)—Widely distributed but not common.

COCCINELLIDAE

SUBCOCCINELLA Guérin-Ménéville

vigintiquattuor punctata (L.)—Local; Filey, common (G.B.W.); Scarborough (E.G.B.); Pickering (M.D.B.).

COCCIDULA Kugelann*rufa* (Herbst)—Fairly common.**RHYZOBIOUS** Stephens*litura* (Fabr.)—Fairly common and widely distributed.**SCYMNUS** Kugelann*auritus* Thunb.—Scarborough (R.L.); Sleights (H.B.).*suturalis* Thunb.—Common.var. *limbatus* Steph.—Common.*rubromaculatus* (Goeze)—Scarborough (R.L.).*redtenbacheri* Muls.—Very rare; Scarborough (T.W.).**HYPERASPIS** Redtenbacher*reppensis* (Herbst)—Local; Scalby Beck, abundant in flood-refuse (R.L.); Cloughton Moor (G.B.W.); Fylingdales Moor (H.B.).**HIPPODAMIA** Faldermann*tredecimpunctata* (L.)—Rare; Filey, 1 on sands (W.J.F.); 1 at Scalby (R.L.).**ADONIA** Mulsant*variegata* (Goeze.)—Rare; Filey (W.W.F.); Newton Dale, 17/4/53 (A.M.R.).**ANISOSTICTA** Duponchel*novemdecimpunctata* (L.)—Rare; Scarborough (E.C.H.); Primrose Valley, Filey (G.B.W.); Throxenby Mere (A.S.).**APHIDEITA** Weise*obliterata* (L.)—Very common.**ADALIA** Mulsant*decempunctata* (L.)—Abundant and very variable.*bipunctata* (L.)—Very common and variable.**COCCINELLA** Linnaeus*septempunctata* (L.)—Very common.*undecimpunctata* (L.)—Common.*hieroglyphica* (L.)—Common on heather; black form common.**MYRRHA** Mulsant*octodecimguttata* (L.)—Fairly common.**PSYLLOBORA** Chevrolat*vigintiduopunctata* (L.)—Common.**CALVIA** Mulsant*quattuordecimguttata* (L.)—Common.**NEOMYSIA** Cowley*oblongoguttata* (L.)—Common on pines.**ANATIS** Mulsant*ocellata* (L.)—Fairly common on pines.**CHILOCORUS** Leach*renipustulatus* (Scriba)—Local; Levisham (W.C.H.); Hole of Horcum (H.B.).*bipustulatus* (L.)—Fairly common and widely distributed.**EXOCHOMUS** Redtenbacher*quadripustulatus* (L.)—Local; Scarborough (R.L.).

SPHINDIDAE

SPHINDUS Chevrolat

dubius (Gyll.)—Hutton Buscel, on fungus on stumps of felled oaks, not scarce (R.L.).

ASPIDIPHORIDAE

ASPIDIPHORUS Sturm

orbiculatus (Gyll.)—Littlebeck (M.L.T.); Raincliffe Wood (R.L.).

CIIDAE

CIS Latreille

nitidus (Fabr.)—Goathland (H.B.).

boleti (Scop.)—Very common.

bidentatus (Ol.)—Scarborough (R.L.).

ENNEARTHRON Mellié

affine (Gyll.)—Scarborough (R.L.).

OCTOTEMNUS Mellié—

glabriculus (Gyll.)—Common and widely distributed.

LYCTIDAE

LYCTUS Fabricius

brunneus Steph.—Egton Bridge, several in house (G.B.W.).

fuscus (L.)—Scarborough, in oak book shelves (G.B.W.).

BOSTRICHIDAE

DINODERUS Stephens

minutus (Fabr.)—Scarborough, introduced in bamboos (G.B.W.); one specimen in the house, Scarborough, 12/53 (A.M.R.).

RHIZOPERTHA Stephens

dominica (Fabr.)—Scarborough, abundant in flour-mill (R.L.); common in flour in store (G.B.W.).

ANOBIIDAE

HEDOBIA Latreille

imperialis (L.)—Scarborough, by beating hedges (R.L.).

GRYNOBIUS Thomson, C. G.

excavatus (Kug.)—Local but widely distributed.

DRYOPHILUS Chevrolat

pusillus (Gyll.)—Cloughton Bank, common in cut larch-tops, Raincliffe Wood (G.B.W.).

ERNOBIUS Thomson, C. G.

nigrinus (Sturm)—Rare, 2 specimens on windblown pine on Cloughton Bank (G.B.W.).

mollis (L.)—Filey (W.J.F.); Seamer Moor, Raincliffe Wood, by beating dead timber (G.B.W.).

STEGOBIUM Motschulsky

paniceum (L.)—Scarborough (E.C.H., G.B.W.).

ANOBIUM Fabricius

punctatum (De G.)—Common.

PTILINUS Mueller, O. F.

pectinicornis (L.)—Uncommon; Forge Valley (G.B.W.); Scarborough (E.F.G.).

PTINIDAE

TRIGONOGENIUS Solier

globulus Sol.—Common in dried figs, Scarborough (E.F.G.).

NIPTUS Boieldieu

hololeucus (Fald.)—Widely distributed.

TIPNUS Thomson, C. G.

unicolor (Pill. & Mitt.)—Scarborough, abundant in pigeon-cotes (R.L., G.B.W.).

PTINUS Linnaeus

fur (L.)—Scarborough, in wood at Museum (E.C.H.); abundant in pigeon-cotes (R.L., G.B.W.).

tectus Boield.—Common in stored foods.

OEDEMERIDAE

NACERDES Faldermann

melanura (L.)—Filey (W.C.H., E.C.H.).

OEDEMERA Olivier

nobilis (Scop.)—Ramsdale, Robin Hood's Bay (J.M.B.).

PYTHIDAE

RABOCERUS Mulsant & Rey

foveolatus (Ljungh)—Rare; Raincliffe Wood by beating oak trees (R.L.).

SALPINGUS Illiger**S. SPHAERISTES** Stephens

castaneus (Panz.)—Scarce; West Ayton (W.C.H.); Seamer Moor (G.B.W.); Goathland (H.B.).

VINCENZELLUS Reitter

viridipennis (Latr.)—Fairly common and widely distributed.

RHINOSIMUS Latreille

ruficollis (L.)—Fairly common and widely distributed.

planirostris (Fabr.)—Common.

PYROCHROIDAE

PYROCHROA Geoffroy

serraticornis (Scop.)—Common and widely distributed.

ANTHICIDAE

NOTOXUS Geoffroy

monoceros (L.)—Very local; Flixton sand-pits, several, 1 black variety (G.B.W.).

ANTHICUS Paykull

humilis Germ.—Very rare; Scarborough (R.L.).

floralis (L.)—Common.

quisquilius Thoms., C. G.—East Ayton (G.B.W.).

instabilis Schm.—Very rare; Scarborough (R.L.).

MELOIDAE

MELOE Linnaeus

proscarabaeus (L.)—Very local; Flamborough (T.S.); Fylingdales Moor (M.L.T.); Hole of Horcum 1938 (Y.N.U. Excn.); Scarborough (E.C.H.); Yedmandale (W.P.).

violaceus Marsham—Very local; with much the same localities as the last.

RHIPIPHORIDAE

METOECUS Dejean

paradoxus (L.)—Rare; Raincliffe Wood, in wasps' nests (R.L.); Forge Valley (G.B.W. and A.E.W.).

MORDELLIDAE

MORDELLISTENA Costa, A.

pumila (Gyll.)—Flixton sandpit (W.D.H.).

ANASPIS Mueller, O. F.

rufilabris Gyll.—Common.

frontalis (L.)—Local.

regimbarti Schilsky—Common.

lurida Steph.—Very local; Forge Valley (G.B.W.).

humeralis Fabr.—Very local; Forge Valley (G.B.W.).

maculata Geoffr. in Fourcr.—Common.

SERROPALPIDAE

TETRATOMA Fabricius

fungorum Fabr.—Local; Forge Valley (G.B.W.); Raincliffe Wood in polypori on birch, larvae in great abundance about Christmas (R.L.).

desmarestii Latr.—Very local; Raincliffe Wood, abundant on dead oak branches about October 8th, also in June (R.L.).

ancora Fabr.—Very local; abundant with the last (R.L.).

ORCHESIA Latreille

micans (Panz.)—Very Local; Scarborough, abundant on fungus on ash (R.L.); Helwath Beck (H.B.).

minor Walk.—Very local; Raincliffe Wood, abundant in summer by beating oaks, Pickering (R.L.).

undulata Kr.—Very local; Raincliffe Wood, abundant under dead holly bark (R.L.); Haugh Rigg, Pickering (M.D.B.).

ABDERA Stephens

flexuosa (Payk.)—Raincliffe Wood, abundant in fungus on alder (R.L.); Sleights, Helwath Beck, abundant (H.B.).

MELANDRYA Fabricius

caraboides (L.)—Very rare; Hole of Horcum, 1 drowned in stream (H.B.).

OSPHYA Illiger

bipunctata (Fabr.)—Very rare; Scarborough (G.B.W.).

LAGRIIDAE

LAGRIA Fabricius

hirta (L.)—Scarborough (R.L.); Hayburn Wyke (G.B.W.); Forge Valley (G.B.W., A.M.R.).

ALLECULIDAE

ISOMIRA Mulsant

murina (L.)—Rare; Hayburn Wyke (G.B.W.); Castle Hill, Scarborough (W.D.H.).

TENEBRIONIDAE

BLAPS Fabricius

mortisaga (L.)—Rare; East Ayton (A.M.R.).

mucronata Latr.—Fairly common and widely distributed.

PHYLAN Stephens

gibbus (Fabr.)—Rare; Cayton Bay, 1 specimen (A.M.R.).

CRYPTICUS Latreille

quisquilius (L.)—Rare; Flixton sandpits, at plant roots (W.J.F., G.B.W., and W.D.H.).

SCAPHIDEMA Redtenbacher

metallicum (Fabr.)—Local; Hackness (E.C.H.); Scarborough, Yedingham in flood-refuse (G.B.W.)

ALPHITOPHAGUS Stephens

bifasciatus (Say)—Very local; Scarborough (R.L.).

GNATHOCERUS Thunberg

cornutus (Fabr.)—Scarborough (R.L., E.A.W.).

TRIBOLIUM Macleay

castaneum (Herbst)—Common and widely distributed.

confusum du Val—Very local; Scarborough, abundant in a flour store (G.B.W.).

PALORUS Mulsant

ratzeburgi (Wissm.)—Scarborough (R.L.).

subdepressus Woll.—Scarborough (R.L.).

ALPHITOBIVS Stephens

diaperinus (Panz.)—Abundant; Scarborough (R.L.).

laevigatus (Fabr.)—Abundant; Scarborough (R.L.).

HYPOPHLOEUS Fabricius

bicolor (Ol.)—Deepdale, Scarborough, common (A.E.W.); Forge Valley under elm bark, 15/4/53 (A.M.R.).

TENEBRIO Linnaeus

molitor (L.)—Fairly common.

obscurus Fabr.—Uncommon; East Ayton (A.M.R.).

CYLINDRONOTUS Faldermann

laevioctostriatus (Goeze)—Cloughton (E.C.H.); Hayburn Wyke (G.B.W.).

SCARABAEIDAE

TYPHAEUS Leach

typhoeus (L.)—Local on sandy places on the moors.

var. **pumilus** (Marsham)—Ellerbeck (R.R.U.K.).

GEOTRUPES Latreille

mutator (Marsham)—Very local; Flamborough, fairly common (E.B.W., T.S.).

spiniger (Marsham)—Common.

tercorarius (L.)—Much less common, but widely distributed.

stercorosus (Scriba)—Common.

vernalis (L.)—Local; Scarborough (E.G.B.); Langdale End (G.B.W.).

APHODIUS Illiger

erraticus (L.)—Local; Pickering (M.D.B.).

subterraneus (L.)—Local; Ebberston (W.P.).

fossor (L.)—Common.

haemorrhoidalis (L.)—Local; Scarborough (T.S.).

luridus (Fabr.)—Common.

var. *gagates* Muell.—Langdale End (W.C.H.); Seamer Moor (G.B.W.).

depressus (Kug.)—Fairly common.

ab. *atramentaria* Er.—Goathland (R.R.U.K.).

ab. *nigripes* Steph.—Bempton (E.C.H.).

rufipes (L.)—Common.

contaminatus (Herbst)—Common.

prodromus (Brahm)—Common.

sphacelatus (Panz.)—Common.

merdarius (Fabr.)—Fairly common.

tristis Zenk.—Very local; Pickering (M.D.B.).

fimetarius (L.)—Common.

aestivalis Steph.—Local; but widely distributed.

scybalarius (Fabr.)—Local; Filey (E.C.H.); Scarborough (E.G.B.).

lapponum Gyll.—Local on the high moors; Goathland (Y.N.U.

Excn., 1903); Scalby High Moor (G.B.W.).

ater (De G.)—Common.

borealis Gyll.—Fairly common on the moors; Seamer Moor, Langdale End (G.B.W.).

constans Duft.—Fairly common and widely distributed on the moors.

tenellus Say—As the last.

rufescens Fabr.—Not common; Scarborough (C.W.R.).

granarius (L.)—Not common; Harwood Dale (G.B.W.).

OXYOMUS Castelnau

sylvestris (Scop.)—Rare; Scarborough (R.L.).

PSAMMOBIUS Heer

sulcicollis (Ill.)—Rare; Scarborough (R.L.).

AEGIALIA Latreille

sabuleti (Panz.)—Local; Scarborough (R.L.); Langdale End (G.B.W.); Pickering (M.D.B.).

arenaria (Fabr.)—Cayton Bay (A.M.R.).

TROX Fabricius

scaber (L.)—Rare; Scarborough (R.L.).

SERICA Macleay

brunnea (L.)—Fairly common and widely distributed.

AMPHIMALLON Berthold in Latreille

solstitialis (L.)—Rare; Scarborough (R.L.); Cloughton (W.J.F.).

MELOLONTA Fabricius

melolontha (L.)—Fairly common and widely distributed.

ab. *albida* Muls.—Beckhole (J.W.S.).

PHYLLOPERTHA Stephens

horticola (L.)—Local; Cloughton (R.J.F.); Hackness (E.C.H.).

CETONIA Fabricius

aurata (L.)—Langdale End, -/6/49 (A.M.R.); Hunmanby (G.B.W.); West Ayton, 6/52 (A.M.R.).

LUCANIDAE

DORCUS Macleay

parallelopipedus (L.)—Langdale, -/6/49 (A.M.R.).

SINODENDRON Schneider

cylindricum (L.)—Fairly common.

CERAMBYCIDAE

ASEMUM Eschscholtz

striatum (L.)—Woods above Wykeham (G.B.W., leg. M. Pittam); Cloughton (A.M.R.); Newton Dale, 7/53 (A.M.R.). This beetle is extending its range in the district, probably as a result of afforestation.

TETROPIUM Kirby, W.

gabrielii Weise var. *crawshayi* Sharp—Sleights, in abundance in all stages, in pine and larch stumps and fallen timber (H.B.); Hackness (G.B.W.).

RHAGIUM Fabricius

bifasciatum Fabr.—Common and widely distributed.

mordax (De G.)—Local, but not uncommon.

STENOCORUS Geoffroy

meridianus (L.)—Local and uncommon; Pickering (Y.N.U. Excn., 1938); Langdale End (E.A.W.).

GRAMMOPTERA Serville

ruficornis (Fabr.)—Common.

ALOSTERNA Mulsant

tabacicolor (De G.)—Common in Forge Valley (G.B.W.); Goathland (H.O.); Beckhole (H.B.).

STRANGALIA Serville

quadrifasciata (L.)—Littlebeck, Helwath Beck, fairly common on alder (H.B.); Thornton-le-Dale, 1 spn., 8/51 (A.M.R.).

maculata (Poda)—Fairly common and widely distributed.

melanura (L.)—Very local; Pickering (M.D.B.); Forge Valley (A.M.R.).

AROMIA Serville

moschata (L.)—Very rare; Langdale End (E.C.H.).

PHYMATODES Mulsant

testaceus (L.)—Scarborough, in a timber-yard in imported timber (E.F.G.).

CLYTUS Laicharting

arietis (L.)—Fairly common and widely distributed.

POGONOCHERUS Zetterstedt

hispidulus (Pill. & Mitt.)—Not common, but widely distributed; West Ayton (W.C.H.); Scarborough (R.L.); Forge Valley,

Hayburn Wyke (G.B.W.); Hole of Horcum (H.B.); Goathland (H.O.).

hispidus (L.)—Very local; Scarborough (R.L.); West Ayton (W.C.H.); Wykeham (A.M.R.).

fasciculatus (De G.)—Very local; Sleights (H.B.).

LEIOPUS Serville

nebulosus (L.)—Local; Forge Valley (W.P.); Beckhole, Hole of Horcum (H.B.); Raincliffe Wood (W.D.H.).

SAPERDA Fabricius

populnea (L.)—Hole of Horcum; abundant, Helwath Beck, galls and larvae plentiful (H.B.).

scalaris (L.)—Rare; Cross Cliff (R.L.); Scarborough (R.L.); Seamer, Hackness (G.B.W.).

carcharias (L.)—Hackness, 1 spn. (A.M.R.). The record for Crosscliff (T.W.) given in Fowler, Coleoptera of the British Islands, Vol. IV, p. 252, was in error and should be deleted.

STENOSTOLA Mulsant

ferrea (Schr.)—Very rare; Beckhole, 1 spn. (H.B.).

CHRYSOMELIDAE

DONACIA Fabricius

clavipes Fabr.—Scarborough Mere, 2 spns., 11/6/43 (T.S.).

crassipes Fabr.—Very local; Scarborough Mere (T.S.).

versicolorea (Brahm)—Very local; Randy Mere, Goathland (H.B.).

aquatica (L.)—Cornelian Bay (R.L.).

[*vulgaris* Zschach—Occurs just outside our area at Bridlington and Arncliffe Wood.]

simplex Fabr.—Forge Valley (W.C.H., E.C.H.); Levisham, Fen Bog, Goathland (H.B.).

PLATEUMARIS Thomson, C. G.

discolor (Panz.)—An upland species, associated with *Eriophorum-Sphagnum* bogs. Goathland (H.O.); Helwath Beck, Hole of Horcum, Fen Bog, Fylingdales Moor (H.B.); found in a lowland locality at Scarborough Mere (G.B.W.).

sericea (L.)—Common and very variable in colour.

ORSODACNE Latreille

cerasi (L.)—Very local; Forge Valley, common (G.B.W.).

ab. *glabrata* (Fabr.)—Fairly common with the type.

ZEUGOPHORA Kunze

subspinosa (Fabr.)—Very local; Langdale End, common (E.C.H.).

LEMA Fabricius

cyanella (L.)—Newton Dale, about 1½ miles above Pickering, common on thistles (G.B.W.).

lichenis Voet—Fairly common.

melanopa (L.)—Not common; Forge Valley (W.C.H.); Filey (W.W.F.); Sleights (H.B.); Yedingham flood-refuse (E.F.G.).

CLYTRA Fabricius

quadipunctata (L.)—Local in nests of *Formica rufa*; Barns Cliff, Langdale (G.B.W.); Helwath Beck (H.B.).

CRYPTOCEPHALUS Geoffroy

aureolus Suffr.—Above Pickering (M.D.B.).

hypochaeridis (L.)—Pickering (A.S.).

moraei (L.)—Pickering (M.D.B.).

labiatus (L.)—Not common, but widely distributed; Seamer Moor, abundant on birch (G.B.W.).

CHRY SOLINA Motschulsky

staphylaea (L.)—Very common and generally distributed.

oricalcia (Muell., O.F.) var *hobsoni* Steph.—West Ayton (W.C.H.).

brunsvicensis (Grav.)—Forge Valley, in plenty on ragwort (R.L.); Pickering, common on *Hypericum* (G.B.W.).

hyperici (Forst.)—As the last.

varians (Schall.)—Forge Valley (W.C.H.); near Pickering, in hundreds (G.B.W.).

polita (L.)—Common and generally distributed.

GASTROPHYSA Chevrolat

viridula (De G.)—Local and not common; Scarborough (R.L.).

polygoni (L.)—Common.

PHAEDON Latreille

cochleariae (Fabr.)—Common and widely distributed.

armoraciae (L.)—Goathland (R.R.U.K.).

tumidulus (Germ.)—Very common; at times a pest on celery.

HYDROTHASSA Thomson, C. G.

aucta (Fabr.)—Local; Throxenby, cut grass, Yedingham, flood-refuse, common (G.B.W.); Sleights (H.B.).

marginella (L.)—Common and widely distributed.

PRASOCURIS Latreille

junci (Brahm)—Rather common and widely distributed.

phellandrii (L.)—Common.

CHRY SOMELA Linnaeus

populi L.—Somewhat local, but often common.

PHYTODECTA Kirby, W.

olivacea (Forst.)—Not common; Littlebeck (M.L.T.).

pallida (L.)—Widely distributed and often common.

PHYLLODECTA Kirby, W.

vulgatissima (L.)—Not common; Scarborough (R.L.).

vitellinae (L.)—Very common.

laticollis Suffr.—Rare; Forge Valley (G.B.W.).

TIMARCHA Latreille

goettingensis (L.)—Local; Forge Valley (W.P.).

PYRRHALTA Joannis

viburni (Payk.)—Very local; Raincliffe Wood (R.L.); Forge Valley (G.B.W.).

GALERUCELLA Crotch

lineola (Fabr.)—Forge Valley, Throxenby Mere (G.B.W.); Yedingham flood-refuse (E.F.G.).

calmariensis (L.)—Local; Filey (W.W.F.); Throxenby Mere (G.B.W.).

tenella (L.)—Fairly common.

nymphaeae (L.)—Throxenby Mere (G.B.W.); West Ayton, 7/51 (A.M.R.).

GALERUCA Geoffroy

tanaceti (L.)—Very local; Langdale End, Filey (W.C.H.); May Moss (E.A.W.).

LOCHMAEA Weise

capreae (L.)—Local; Levisham (W.C.H.); Helwath Beck, plentiful on *Salix* (H.B.).

suturalis (Thoms., C. G.)—Common on the moors.

var. *nigrata* Weise—Fairly common.

crataegi (Forst.)—Uncommon; Ganton (R.L.); Levisham (M.L.T.).

PHYLLOBROTICA Redtenbacher

quadrimaculata (L.)—Throxenby Mere, abundant on skullcap (R.L.); still occurs there (G.B.W.).

LUPERUS Geoffroy

longicornis (Fabr.)—Common and widely distributed.

flavipes (L.)—Local; Barns Cliff (M.L.T.); Beckhole (H.B.); Goathland (R.R.U.K.).

SERMYLASSA Reitter

halensis (L.)—Common.

PHYLLOTRETA Stephens

vittula Redt.—Hackness (E.C.H.).

vittata (Fabr.)—Forge Valley (G.B.W.).

memorum (L.)—Very common.

undulata Kutsch.—Very common; these two species often (e.g. 1948) do great damage to turnips.

tetrastigma (Com.)—Very local; Beckhole (H.B.).

flexuosa (Ill.)—Sherburn flood-refuse (G.B.W.); Filey (E.C.H.); W.D.H. says this is a dark variety of *memorum*.

ochripes (Curt.)—Very local; Scarborough (R.L.); Forge Valley (E.C.H.).

atra (Fabr.)—Raincliffe Wood (E.C.H.); Forge Valley (G.B.W.); var. *cruciferae* (Goeze)—Hackness, Langdale End (E.C.H.).

aerea All.—Very local; Forge Valley (E.C.H.).

consobrina (Curt.)—Not uncommon in Forge Valley in September (G.B.W.).

nodicornis (Marsham)—Rare; Raincliffe Wood (E.C.H.).

APHTHONA Chevrolat

euphorbiae (Schr.)—Pickering (A.S.).

cyanella Redt.—Rare; Forge Valley (G.B.W.).

coerulea (Geoff. in Fourcr.)—Locally common; Filey, all specimens with black legs (W.J.F.); Langdale End (E.C.H.); Seamer (W.C.H.).

herbigrada (Curt.)—Hayburn Wyke (G.B.W.); Pickering (M.D.B.).

LONGITARSUS Berthold in Latreille

ochroleucus (Marsham)—Uncommon; Cloughton (E.C.H.); Flixton sandpit (W.D.H.).

jacobaeae (Waterh., G. R.)—Very common.

succineus (Foudr.)—Not uncommon; Hayburn Wyke, Cayton Bay, East Ayton (G.B.W.).

tabidus (Fabr.)—Very local; Scarborough (R.L.).

membranaceus (Foudr.)—Local; Cloughton (E.C.H.).

melanocephalus (De G.)—Common.

exoletus (L.)—Local; East Ayton (G.B.W.).

gracilis Kutsch.—Rare; Scarborough (E.G.B.).

ganglbaueri Heik.—Langdale End (E.C.H.); Forge Valley (G.B.W.).

suturalis (Marsham)—Local; Scarborough (E.C.H.).

atricillus (L.)—Local; Pickering, East Ayton (G.B.W.).

sutrellus (Duft.)—Common and generally distributed.

holsaticus (L.)—Rare; near Falcon Inn, 1 specimen in marshy place containing both *Equisetum* and *Pedicularis* (W.J.F.).

luridus (Scop.)—Very common.

brunneus (Duft.)—Very local; Ravenscar (G.B.W.).

anchusae (Payk.)—Very local; Langdale End (E.C.H.).

HALTICA (Geoffroy) Illiger

brevicollis Foudr.—Eberston High Moor (W.C.H.); this record is very doubtful.

oleracea (L.)—Common and widely distributed.

pusilla Duft.—Goathland (R.R.U.K.).

var. *montana* (Foudr.)—Scarborough (E.G.B.); Scalby High Moor (G.B.W.).

britteni Sharp—Abundant on heather.

BATOPHILA Foudras

rubi (Payk.)—Fairly common and widely distributed.

CREPIDODERA Faldermann

transversa (Marsham)—Common.

ferruginea (Scop.)—Common.

DEROCREPIS Weise

rufipes (L.)—Common.

HIPPURIPHILA Foudras

modeeri (L.)—Very local; Forge Valley, Throxenby Mere (G.B.W.).

CHALCOIDES Foudras

aurea (Geoffr. in Fourcr.)—Very local; Scarborough (R.L.).

fulvicornis (Fabr.)—Common.

var. *picicornis* Weise—Hayburn Wyke, Forge Valley (G.B.W.).

aurata (Marsham)—Uncommon and local.

MANTURA Stephens

obtusata (Gyll.)—Very local; Scarborough, abundant in flood-refuse (R.L.); Pickering (M.D.B.).

rustica (L.)—Scarborough, abundant in moss and flood-refuse (R.L.); fairly common in the district.

matthewsii (Curt.)—Forge Valley, abundant on *Helianthemum* (R.L.).

CHAETOCNEMA Stephens

concinna (Marsham)—Common.

conducta Motsch.—Very rare and local; Forge Valley, 2 specimens by sweeping in May (E.C.H.); Scarborough district, 1936 (C.E.S.).

arida Foudr.—Very rare; Scarborough (R.L.).

subcoerulea Kutsch.—Forge Valley (G.B.W.).

hortensis (Geoffr. in Fourcr.)—Very local; Scarborough (R.L.).

sahlbergii (Gyll.)—Very local; Ringing Keld Bog, in plenty in moss (R.L.).

SPHAERODERMA Stephens

testaceum (Fabr.)—Common.

rubidum Graëlls—Common.

APTEROPEDA Stephens

orbiculata (Marsham)—Scalby Beck, abundant in flood-refuse (R.L.); Forge Valley (W.C.H.).

globosa (Ill.)—Rare; Scalby Beck, in flood-refuse (R.L.); Forge Valley, Gristhorpe Bay (G.B.W.).

MNIOPHILA Stephens

muscorum (Koch, J. D. W.)—Local; near Raincliffe Wood, in plenty, by beating trees (R.L.); Hay Brow, in moss in the winter (G.B.W.).

PSYLLIODES Berthold in Latreille

picina (Marsham)—Local; Scarborough, 4 by evening sweeping (G.B.W.); Pickering (M.D.B.).

chrysocephala (L.)—Local; Scarborough (M.L.T.).

napi (Fabr.)—Local but not uncommon.

cuprea (Koch, J. D. W.)—Fairly common.

CASSIDA Linnaeus

hemisphaerica Herbst—Rare; Filey, 1 specimen (W.W.F.).

flaveola Thunb.—Fairly common.

vibex (L.)—Rare; Filey, 1 specimen (W.W.F.).

rubiginosa Muell., O. F.—Common.

BRUCHIDAE

BRUCHUS Linnaeus

rufimanus Boh.—Not uncommon in beans in shops.

pisorum (L.)—With the last.

BRUCHIDIUS Schilsky

unicolor (Ol.)—var. *debilis* (Gyll.)—Givendale, East Ayton, by sweeping *Helianthemum* (G.B.W.).

incarnatus (Boh.)—Scarborough (R.L.). Introduced.

fasciatus (Ol.)—Pickering (M.D.B.).

CALLOSOBRUCHUS Pic

chinensis (L.)—Scarborough (W.W.F., Brit. Col. IV, p. 261).

PLATYSTOMIDAE

BRACHYTARSUS Schoenherr

nebulosus (Forst.)—Not common as a rule, but widely distributed; common on fallen firs in Forge Valley, Pickering (G.B.W.).

CHORAGUS Kirby, W.

sheppardi Kirby, W.—Very rare; Cornelian Bay, 1 specimen by beating hawthorn (R.L.).

CURCULIONIDAE

RHINOMACER Fabricius

attelaboides Fabr.—Fairly common by beating male flowers of pine in late May and early June; Wrench Green, Staintondale, Hayburn Wyke (G.B.W.); Raincliffe Wood (E.C.H.).

LASIORHYNCHITES Jekel

ophthalmicus (Steph.)—Rare; Scarborough (W.W.F., Brit. Col. V, p.126).

CAENORHINUS Thomson, C. G.

nanus (Payk.)—Not common; Seamer Moor, Raincliffe Wood (G.B.W.).

longiceps Thoms., C. G.—Ellerdale (G.B.W.).

germanicus (Herbst)—Littlebeck (M.L.T.); Robin Hood's Bay (W.J.F.).

aeneovirens (Marsham)—Local; Scarborough (R.L.); Sawdon Dale (G.B.W.); Pickering (Y.N.U. Excn., 1938); Goathland (R.R.U.K.).

aequatus (L.)—Wykeham (A.M.R.).

RHYNCHITES Schneider

cupreus (L.)—Common on mountain ash.

DEPORAUS Samouelle

mannerheimi Humm.—Very local; Fylingdales, Langdale End (M.L.T.); Pickering (Y.N.U. Excn., 1938); Raincliffe Wood (W.D.H.).

betulae (L.)—Common.

ATTELABUS Linnaeus

nitens (Scop.)—Not common, but widely distributed.

APION Herbst

violaceum Kirby, W.—Common.

marchicum Herbst—Very local; Raincliffe Wood (E.C.H.).

affine Kirby, W.—Local; Cloughton (E.C.H.); Beckhole, Robin Hood's Bay (H.B.).

curtiostre Germ.—Common.

aenum (Fabr.)—Fairly common on Malva, **Ballota**, etc.

radiolus Kirby, W.—Common on mallow.

ulicis (Forst.)—Common.

frumentarium (Payk.)—Fairly common.

var. **brachypterum** Sharp—Scalby, Scalby High Moor (G.B.W.).

s. **cruentatum** Walt., J.—Langdale End (E.C.H.); Raincliffe Wood in moles' nest (G.B.W.).

- var. **desideratum** Sharp—Scarborough (G.B.W.); Robin Hood's Bay (W.J.F.).
- sanguineum** (De G.)—Very local; Goathland (R.R.U.K.).
- rubens** Steph.—Rare; Scarborough (J.W.); Ravenscar (A.E.W.).
- pallipes** Kirby, W.—Common in spring and autumn on **Mercurialis**.
- seniculus** Kirby, W.—Fairly common.
- onopordi** Kirby, W.—Fairly common.
- carduorum** Kirby, W.—Common.
- loti** Kirby, W.—Local; Langdale End (G.B.W.); South Cliff, Scarborough (C.E.S., G.B.W.); Robin Hood's Bay (H.B.).
- meliloti** Kirby, W.—Staxton (G.B.W.).
- tenue** Kirby, W.—Very local; Filey (W.W.F.).
- striatum** Kirby, W.—Fairly common.
- immune** Kirby, W.—Local; Goathland, Sleights (H.B.).
- gyllenhali** Kirby, W.—Rare; Hackness (E.C.H.).
- psi** Fabr.—Common.
- aethiops** Herbst—Local; Hunmanby, Hayburn Wyke, common on **Vicia sylvatica** (G.B.W.).
- spencii** Kirby, W.—Local; Beckhole (H.B.); Goathland (R.R.U.K.).
- punctigerum** (Payk.)—Local; Scalby (G.B.W.); Robin Hood's Bay (H.B.).
- reflexum** Gyll.—Yedingham flood-refuse (E.F.G.).
- vorax** Herbst—Local; Forge Valley (G.B.W.).
- ononis** Kirby, W.—Common.
- simile** Kirby, W.—Very local; Filey (G.B.W.).
- viciae** (Payk.)—Common.
- ervi** Kirby, W.—Common.
- subulatum** Kirby, W.—Local; Robin Hood's Bay (H.B.); Pickering (M.D.B.).
- craccae** (L.)—Rare; Langdale End (E.C.H.).
- viens** Herbst—Common.
- dichroum** Bed.—Common.
- nigritarse** Kirby, W.—Somewhat local but widely distributed.
- aestivum** Germ.—Rather local; Sherburn flood-refuse, Flixton sand-pits (G.B.W.); Scarborough (C.E.S.).
- apricans** Herbst—Very common.
- schönherri** Boh.—Very rare; Scarborough, Aug. 1837 (J.W.).
- assimile** Kirby, W.—Fairly common and widely distributed.
- ononicola** Bach—Rare; Raincliffe Wood (E.C.H.).

OTIORRHYNCHUS Germar

- raucus** (Fabr.)—Very local; Goathland (R.R.U.K.).
- nodosus** (Muell., O. F.)—Very local; Scarborough, in moss on North Cliff (R.L.); West Ayton, 2/9/53 (A.M.R.).
- singularis** (L.)—Very common.
- sulcatus** (Fabr.)—Common, and at times destructive in greenhouses.
- ovatus** (L.)—Local; Ravenscar (Y.N.U. Excn., 1891); Pickering (M.D.B.).
- atroapterus** (De G.)—Langdale End (H.C.H.).

TRACHYPHLOEUS Germar*bifoveolatus* (Beck).—Scarborough (W.H.).*aristatus* Gyll.—Scarborough (T.W.).*olivieri* Bed.—Scarborough (W.H.).**PHYLLOBIUS** Schoenherr*viridicollis* (Fabr.).—Locally common.*parvulus* (Ol.).—Common.*virideaeris* (Laich.).—Common.*oblongus* (L.).—Common.*pyri* (L.).—Common.*maculicornis* Germ.—Fairly common.*argentatus* (L.).—Very common.*calcaratus* (Fabr.).—Common.*pomaceus* Gyll.—Very common.**POLYDRUSUS** Germar*pterygomalis* Boh.—Common.*cervinus* (L.).—Common.*pilosus* Gredl.—Common and widely distributed (G.B.W.).*confluens* Steph.—Very local; Scarborough (R.L.); Hole of Horcum (H.B.).*tereticollis* (De G.).—Common.*mollis* (Stroem, H.).—Locally common.**LIOPHLOEUS** Germar*tessulatus* (Muell., O. F.).—Fairly common.**SCIAPHILUS** Schoenherr*asperatus* (Bonsd.).—Common.**BRACHYSOMUS** Schoenherr*echinatus* (Bonsd.).—Cloughton, Yedmandale (E.C.H.).**BARYPITHES** du Val*araneiformis* (Schränk)—Raincliffe Wood (H.C.H.); Cayton Bay, 1950 (A.M.R.).*pellucidus* (Boh.).—Wykeham, 8/51, Forge Valley (A.M.R.).*sulcifrons* (Boh.).—Scarborough, in moss on North Cliff (R.L.).**STROPHOSOMUS** Schoenherr*melanogrammus* (Forst.).—Very common.*faber* (Herbst).—Scarborough (W.C.H.); Helwath Beck (H.B.).*sus* Steph.—Common on heather.*nebulosus* Steph.—Fairly common and widely distributed.**CNEORRHINUS** Schoenherr*plumbeus* (Marsham).—Local; Thornton-le-Dale (H.C.H.); Forge Valley, Saltergate (G.B.W.); Seamer (A.E.W.).**PHILOPEDON** Stephens*plagiatus* (Schall.).—Cloughton (H.C.H.).**BARYNOTUS** Germar*obscurus* (Fabr.).—Common.[*squamosus* Germ.] var. *schoenherri* (Zett.).—Common in cut meadow grass in the Scarborough district.*moerens* (Fabr.).—Common.

SITONA Germar

- regensteiniensis* (Herbst)—Common.
striatellus Gyll.—Common.
lineatus (L.)—Common.
suturalis Steph.—Common.
sulcifrons (Thunb.)—Common.
puncticollis Steph.—Common.
lepidus Gyll.—Common.
lineellus (Bonsd.)—Rare; Filey (W.W.F.).
macularius (Marshall)—Raincliffe Wood (E.C.H.); W. E. Sharp says
 "Probably *crinitus* but remarkably small".
hispidulus (Fabr.)—Common.
cylindricollis Fahr.—Cornelian Bay (C.E.S.).
humeralis Steph.—Common.

TANYMECUS Germar

- palliatus* (Fabr.)—Very local; Scarborough (R.L.); Pickering (M.D.B.).

TROPIPHORUS Schoenherr

- terricola* (Newm.)—Common.

CLEONUS Schoenherr

- piger* (Scop.)—Local; Scarborough (W.P.); Hackness (E.C.H.).

MESITES Schoenherr

- tardii* (Curt.)—Very local; abundant in felled stumps of ash and under bark of various trees; Hayburn Wyke, June 1868 (R.L. and T.W.); still occurs there (G.B.W.) and at Robin Hood's Bay (T.S.).

BAGOUS Germar

- limosus* (Gyll.)—Scarborough (W.W.F., Brit. Col. V. 288), recorded as *petro*.
subcarinatus Gyll.—Scarborough (R.L.).

HYDRONOMUS Schoenherr

- alismaticus* (Marshall)—Snainton brick-ponds (W.C.H.).

TANYSPHYRUS Germar

- lemnæ* (Payk.)—Local; Scarborough (R.L.); Seamer (W.C.H.); Forge Valley, Throxenby Mere (E.C.H.).

DORYTOMUS Germar

- taeniatus* (Fabr.)—Common.
longimanus (Forst.)—Scarborough North Cliff (R.L.).
tortrix (L.)—Scarborough (R.L.).
melanophthalmus (Payk.)—Ellerdale, Hayburn Wyke (G.B.W.).
rufatus (Bed.)—Littlebeck (M.L.T.); Sleights (H.B.); Forge Valley, Hayburn Wyke (G.B.W.).

NOTARIS Germar

- acidulus* (L.)—Common.
aethiops (Fabr.)—Very rare; Sherburn flood-refuse, 1 specimen (G.B.W.).

GRYPUS Germar

- equiseti* (Fabr.)—Common.

ORTHOCHAETES Mueller, P.W.J.

setiger (Beck)—Scarborough, abundant in moss on North Cliff (R.L.); Helwath Beck (H.B.).

ELLESCHUS Stephens

bipunctatus (L.)—Hayburn Wyke, at one time common on sallows, much less common of late years.

TYCHIUS Germar

lineatulus Steph.—Rare; Scarborough in moss on North Cliff (R.L.); Filey, 1 specimen (W.W.F.).

schneideri (Herbst)—Filey (W.W.F.); Scarborough (R.L.).

ANTHONOMUS Germar

rubi (Herbst)—Common.

var. *brunneipennis* Curt.—Robin Hood's Bay (H.B.).

pomorum (L.)—Cross Cliff (R.L.); Forge Valley, Pickering (G.B.W.).

inversus Bed.—Rare; Levisham (W.C.H.); Hole of Horcum (H.B.).

ab. *rosinae* Desbr.—Forge Valley, 1 specimen (G.B.W.).

pedicularius (L.)—Common.

conspersus Desbr.—Common, and at times abundant on mountain ash in several localities in the Scarborough district (G.B.W.).

CURCULIO Linnaeus**S. CURCULIO** s. s.

villosus Fabr.—Pickering (Y.N.U.Excn., 1918).

betulae (Steph.)—Rye says "One specimen named by me for Mr. T. Wilkinson of Scarborough".

rubidus (Gyll.)—Goathland, 1 specimen (R.R.U.K.).

S. BALANOBIUS Jekel

salicivorus Payk.—Common.

pyrrhoceras Marsham—Rare; Forge Valley (G.B.W.).

PISSODES Germar

pini (L.)—Stated by the forester to be common at Thornton-le-Dale in the Government Afforestation Woods (*teste* G. B. Ryle).

MAGDALIS Germar

armigera (Geoffr. in Fourcr.)—Forge Valley (G.B.W.).

carbonaria (L.)—One in Raincliffe Wood (G.B.W.).

HYLOBIUS Germar

abietis (L.)—Common and generally distributed.

LIOSOMA Stephens

deflexum (Panz.)—Common.

ab. *collaris* Rye—Rare; Seamer Moor, 1 in moss (G.B.W.).

ALOPHUS Schoenherr

triguttatus (Fabr.)—Local; Forge Valley (H.C.H.); Seamer (A.E.W.).

PHYTONOMUS Schoenherr

austriacus (Schr.)—Fairly common.

dauci (Ol.)—Rare; Flixton sand-pits, under *Erodium* (G.B.W.).

adspersus (Fabr.)—Scarborough (R.L.).

punicis (L.)—Local; Filey (W.W.F.); Raincliffe Wood (E.C.H.); Pickering (J.M.B.).

nigrirostris (Fabr.)—Common.

arator (L.)—Local; Scarborough (R.L.).

suspiciosus (Herbst)—Filey, not uncommon near the coast (W.W.F.).

plantaginis (De G.)—Fairly common.

fuscocinereus (Marsham)—Uncommon; Forge Valley (H.C.H.); Cloughton (E.C.H.).

posticus (Gyll.)—Not common but widely distributed.

venustus (Fabr.)—Filey (W.W.F.).

SITOPHILUS Schoenherr

granarius (L.)—Common in food stores and generally distributed.

oryzae (L.)—With the last, also common.

CRYPTORHYNCHIDIUS Pierce

lapathi (L.)—Hayburn Wyke, not uncommon on sallows (G.B.W.); Pickering (M.D.B.).

BARIS Germar

laticollis (Marsham)—Ganton, abundant in flood-refuse (R.L.).

lepidii Germ.—Goathland, Beckhole (R.R.U.K.).

LIMNOBARIS Bedel

t-album (L.)—Ringing Keld Bog, abundant in moss (R.L.);

Levisham (M.L.T.); Goathland, Fylingdales Moor (R.R.U.K.).

COELIOIDES Schoenherr

dryados (Gmel. in L.)—Fairly common.

rubicundus (Herbst)—Local; Robin Hood's Bay, Sleights (H.B.); Pickering (G.B.W.).

STENOCARUS Thomson, C. G.

umbrinus (Gyll.)—Fairly common near Scarborough.

ZACLADUS Reitter

geranii (Payk.)—Local; Filey (W.W.F.); Primrose Valley (G.B.W.).

MICRELUS Thomson, C. G.

ericae (Gyll.)—Very common on the moors.

CIDNORHINUS Thomson, C. G.

quadrinotatus (L.)—Very common.

CEUTHORHYNCHIDIUS du Val

dawsoni Bris.—Rare; Scarborough (E.C.H.).

troglydites (Fabr.)—Common.

CEUTHORHYNCHUS Germar

floralis (Payk.)—Common.

litura (Fabr.)—Common.

trimaculatus (Fabr.)—Raincliffe Wood (R.L.); Yedmandale (E.C.H.).

asperifoliarium (Gyll.)—Egton Bridge (H.B.).

pollinarius (Forst.)—Common.

pleurostigma (Marsham)—Common.

assimilis (Payk.)—Common.

cochleariae (Gyll.)—Egton Bridge (H.B.).

quadridens (Panz.)—Local; Hayburn Wyke, Ellerdale (G.B.W.); Filey (W.W.F.).

sulcicollis (Payk.)—Rare; Filey (E.C.H.).

erysimi (Fabr.)—Common.

contractus (Marsham)—Common.

RHINONCUS Schoenherr

pericarpus (L.)—Common.

inconspectus (Herbst)—Pickering (M.D.B.).

castor (Fabr.)—Scalby Beck, common in flood-refuse (R.L.); Saltergate (G.B.W.).

bruchoides (Herbst)—Very local; Scarborough Mere (R.L.).

perpendicularis (Reich.)—Scarborough Mere (G.B.W.).

LITODACTYLUS Redtenbacher

leucogaster (Marsham)—Very local; Scarborough (R.L.).

PHYTOBIUS Schoenherr

canaliculatus Fahr.—Rare; Forge Valley (E.C.H.).

comari (Herbst)—Very local; Scarborough (R.L.).

quadrituberculatus (Fabr.)—Very local; Filey (W.W.F.); Hayburn Wyke (G.B.W.); Forge Valley (E.C.H.).

muricatus Bris.—Rare; Raincliffe Wood (E.C.H.).

quadrinodosus (Gyll.)—Rare; Scarborough (R.L.).

POOPHAGUS Schoenherr

sisymbrii (Fabr.)—Ebberston (W.P.); Snainton brick-ponds (W.C.H.).

OROBITIS Germar

cynaneus (L.)—Scarborough, abundant in moss on North Side (R.L.); Langdale End, Silpho Moor (E.C.H.); Pickering (M.D.B.).

NANOPHYES Schoenherr

marmoratus (Goeze)—Hackness, Langdale End (E.C.H.); Forge Valley (G.B.W.).

MECINUS Germar

pyraster (Herbst)—Common.

GYMNETRON Schoenherr

labile (Herbst)—Scarborough, North Cliff (R.L.); Beckhole (H.B.).

linariae (Panz.)—Pickering (M.D.B.); Yedingham flood-refuse (E.F.G., G.B.W.).

CIONUS Schellenberg

alauda (Herbst)—Local and rather uncommon; Forge Valley (G.B.W.).

scrophulariae (L.)—Common.

CLEOPUS Stephens

pulchellus (Herbst)—Local; Beckhole (H.B.).

ANOPLUS Schoenherr

plantaris Naezen—Common.

roboris Suffr.—Very local; Hayburn Wyke on alder (G.B.W.).

RHYNCHAENUS Schellenberg

quercus (L.)—Rather local; Scarborough (R.L.); Forge Valley, Silpho Moor (E.C.H.); Langdale End (G.B.W.).

pilosus (Fabr.)—Robin Hood's Bay (H.B.).

avellanae (Don.)—Scarborough (R.L.).

rusci (Herbst)—Scarborough (R.L.); Seamer Moor (G.B.W.); Pickering (Y.N.U.Excn., 1938).

fagi (L.)—Common.

salicis (L.)—Common.

foliorum (Muell., O. F.)—Rare; Hayburn Wyke (G.B.W.).

RHAMPHUS Schellenberg

pulicarius (Herbst)—Common and widely distributed.

SCOLYTIDAE

SCOLYTUS Geoffroy

intricatus (Ratz.)—Beckhole, Sleights (H.B.).

scolytus (Fabr.)—At one time abundant in Raincliffe Wood and at Seamer, not so common nowadays; Beckhole, Sleights (H.B.).

mali (Bech.)—Scarborough (R.L.); Lawson's record of **S. intricatus** is given under **mali** by W.J.F.

HYLESINUS Fabricius

crenatus (Fabr.)—Fairly common and widely distributed.

fraxini (Panz.)—Common.

oleiperda (Fabr.)—Scarborough (E.G.B.).

XYLECHINUS Chapuis

pilosus (Ratz.)—Scarborough (R.L.); very rare, probably introduced.

KISSOPHAGUS Chapuis

hederae (Schmitt)—Raincliffe Wood (R.L.); prefers ivy just dying after severance from roots but not dead.

HYLASTINUS Bedel

obscurus (Marsham)—Scarborough (T.W.); Robin Hood's Bay, Sleights, Littlebeck (H.B.); Throxenby Mere 1 on **Salix** leaf (W.D.H.).

MYELOPHILUS Eichhoff

piniperda (L.)—Raincliffe Wood (E.C.H.); Goathland (H.B.).

HYLURGOPS Leconte

palliatus (Gyll.)—Rather common and widely distributed.

HYLASTES Erichson

ater (Payk.)—Hutton Buscel (E.G.B.); Robin Hood's Bay (H.B.); these records may refer to the next species.

brunneus Er.—Wykeham (G.B.W.).

opacus Er.—Wykeham, a few under bark (G.B.W.).

POLYGRAPHUS Erichson

poligraphus (L.)—Very rare; Scarborough 1 specimen under bark (R.L.).

CRYPHALUS Erichson

abietis (Ratz.)—Scarborough (C.E.S.); Wykeham (G.B.W.).

TRYPOPHLOEUS Fairmaire

asperatus (Gyll.)—Scarborough (T.W.).

PHLOEOPHTHORUS Wollaston

rhododactylus (Marsham)—Locally abundant in stems of gorse.

DRYOCOETES Eichoff

autographus (Ratz.)—Local; Scarborough (T.W.); Beedale (G.B.W.).

villosus (Fabr.)—Sleights (H.B.).

TRYPODENDRON Stephens

domesticum (L.)—Fairly common.

lineatum (Ol.)—The larval burrows were found at Thornton-le-Dale but not the perfect insect.

PITYOGENES Bedel

chalcographus (L.)—Very local; Scarborough (T.W.).

bidentatus (Herbst)—Common; Cloughton, abundant in pine branches (G.B.W.); Sleights, Goathland (H.B.).

IPS De Geer.

typographus (L.)—Scarborough (T.W.).

acuminatus Gyll.—Rare; Scarborough (R.L.).

ONTHOTOMICUS Ferrari

laricus (Fabr.)—Very local; Forge Valley (E.C.H.).

ANISANDRUS Ferrari

saxesenii (Ratz.)—Broxa, Langdale End (A.M.R.).

PLATYPODIDAE

PLATYPUS Herbst

cylindrus (Fabr.)—Very local and rare; Scarborough (R.L., T.W.).

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Order HYMENOPTERA

G. B. Walsh

SYMPHYTA—SAWFLIES

It is only during the last few years that the sawflies of the district have been systematically collected and studied, and so records tend to cluster round the three centres of population where the collectors have lived, Whitby, Robin Hood's Bay and Scarborough.

Much still remains to be done in adding new species and in extending our knowledge of distribution—in particular the Carrs and the Wolds are almost wholly *terra incognita*.

The records are mainly compiled from the record-books of the Scarborough Field Naturalists' Society, from a private list generously lent by Mr. H. Britten, fil., and from the columns of *The Naturalist*, especially a list of sawflies from the Robin Hood's Bay area compiled by Mr. J. M. Brown (*Nat.*, 1944, pp. 124-127).

The sawflies collected by W. J. Fordham and G. B. Walsh were named by the late Rev. F. D. Morice; for the identification of the others the responsibility rests with the captors.

We are deeply indebted to Dr. W. D. Hincks for his assistance in the compilation of this list and to Mr. R. B. Benson for much useful advice and help.

As far as the two parts already (Sept., 1954) go, the classification and nomenclature are those of R. B. Benson, *Handbooks for the Identification of British Insects, Symphyta*, Parts 2a and 2b published by the Royal Entomological Society of London, 31 Oct., 1951, and 5 Sept., 1952. After this, the list follows *A Check List of British Insects* by A. S. Kloet and W. D. Hincks.

The following initials are used :—

H.B.	H. Britten fil.	E.C.H.	E. C. Horrell
J.M.B.	J. M. Brown	R.L.	R. Lawson
H.J.B.	H. J. Burkill	G.T.P.	G. T. Porritt
W.F.	W. Falconer	M.L.T.	M. L. Thompson
W.J.F.	W. J. Fordham	G.B.W.	G. B. Walsh
W.W.F.	W. W. Fowler	T.W.	T. Wilkinson
W.D.H.	W. D. Hincks		

XYELIDAE

XYELA Dalman

julii Bréb.—Though Mr. Benson states that this is "common and sometimes extremely abundant" (p. 9), there is only one record for our district, a single spn. taken on spruce in Forge Valley (G.B.W.).

PAMPHILIIDAE

PAMPHILIUS Latreille**hortorum** (Klug)—Brockets (J.M.B.).**vafer** (L.)—Seamer Moor (G.B.W.).**pallipes** (Zett.)—Ramsdale on sweet gale, **Myrrhis odorata** (J.M.B.).**inanitus** (De Villers, C. J.)—Fyling Hall (J.M.B.).**sylvaticus** (L.)—Robin Hood's Bay on several occasions, Ramsdale (J.M.B.); Fyling Hall, 26/6/29 (W.J.F.).

SIRICIDAE

UROCERUS Geoffroy**gigas** (L.)—Thorpe (J.M.B.); occurs in small numbers each year in the Scarborough district (G.B.W.); Beckhole, Sleights (H.B.).**SIREX** Linnaeus**juvencus** (L.)—Rare at Scarborough (G.B.W.) and at Robin Hood's Bay (J.M.B.).

CEPHIDAE

HARTIGIA Schioedte**linearis** (Schr.)—Low Farm Fields, Robin Hood's Bay (J.M.B.).**CEPHUS** Latreille**pygmaeus** (L.)—Robin Hood's Bay (J.M.B., H.B.); Flixton (J.M.B.); Wykeham (W.D.H.).**CALAMEUTA** Konow**pallipes** (Klug)—Ramsdale (J.M.B.).

ARGIDAE

ARGE Schrank**ustulata** (L.)—Ramsdale on flowers of sweet gale (J.M.B.); Fyling Hall, -/6/28 (W.J.F.).

CIMBICIDAE

CIMBEX Olivier**femorata** (L.)—Staintondale (G.B.W.).**TRICHIOSOMA** Leach**sorbi** Hart.—Larvae not uncommon on mountain ash, **Sorbus aucuparia** at Staintondale (G.B.W.).**lucorum** (L.)—Brockets (J.M.B.); Staintondale, common near Scarborough (G.B.W.); Filey (G.T.P.).

DIPRIONIDAE

NEODIPRION Rohwer**sertifer** (Geoffr.)—Larvae at Goathland, 7/7/31 (R. J. Flintoff, det. R. B. Benson).**DIPRION** Schrank**pini** (L.)—Occasional in the Scarborough district, sometimes stripping pine trees of their needles, but rarely doing serious damage (G.B.W.).

TENTHREDINIDAE

STROMBOCEROS Konow**delicatulus** (Fall.)—Generally common about bracken, **Pteridium aquilinum**.

STRONGYLOGASTER Dahlbom

lineata (Klug)—Common about bracken and generally distributed; J.M.B. says "Males much rarer".

ANEUGMENUS Hartig

padi (L.) (= *stramineipes* Klug)—Common and generally distributed among bracken.

MELISANDRA Benson

morio (Fabr.)—Hawsker, Maw (J.M.B.); Egton Bridge (H.B.).

SELANDRIA Leach

serva (Fabr.)—Common and generally distributed, early June to late August.

sixii Voll.—Brockets, 30/5/40 (J.M.B.).

LODERUS Konow

vestigialis Klug—Common among horsetail, *Equisetum* spp. and widely distributed.

DOLERUS Panzer

bimaculatus (Geoffr. in Fourcr.)—Robin Hood's Bay among horsetail (J.M.B.).

pratensis (L.)—With the last (J.M.B.).

germanicus (Fabr.)—Not common; Robin Hood's Bay (J.M.B.).

aericeps Thoms., C. G.—Very plentiful in the Robin Hood's Bay area wherever *Equisetum limosum* and *E. palustre* occur from June to August (J.M.B.); Levisham, Goathland (H.B.); Throxenby Mere (G.B.W.).

cothurnatus Lep.—With the last.

madidus (Klug)—Ramsdale about *Juncus* (J.M.B.); Hole of Horcum (H.B.).

ferrugatus Lep.—About *Juncus* on several occasions at Robin Hood's Bay (J.M.B.).

puncticollis Thoms., C. G.—Robin Hood's Bay (J.M.B.).

gonager (Fabr.)—Generally distributed and common in grassy places, even in the middle of Scarborough.

haematodes Schr.—Jugger Howe Dale (G.B.W.); Robin Hood's Bay (J.M.B.).

asper Zadd.—Raw, Robin Hood's Bay (J.M.B.); Seamer Moor (G.B.W.); Fyling Hall (W.J.F.).

nitens Zadd.—Rigg, Robin Hood's Bay (J.M.B.).

niger (L.)—Ramsdale, Oxbank Wood (J.M.B.).

aeneus Hart.—Very common.

picipes (Klug)—Common and widely distributed.

nigratus Muell., O. F.—Common.

anthracinus Klug—Only males seen in late March in the Robin Hood's Bay area (J.M.B.).

rugosulus Dalla Torre (= *brevitarsus* Hart.)—Plentiful in the Robin Hood's Bay area (J.M.B.).

HETERARTHURUS Stephens

aceris (Kalt.)—Larvae in sycamore, *Acer campestre*, Robin Hood's Bay (J.M.B.).

vagans (Fall.)—Beaten from alder, *Alnus*, Brockets (J.M.B.).

ATHALIA Leach

- bicolor** Lep.—Robin Hood's Bay, 9/6/45 (J.M.B.).
glabricollis Thoms., C. G.—Common about flowers of **Cruciferae** from June to late September in the Robin Hood's Bay area (J.M.B.).
lucens Klug—Ramsdale on sweet gale, 1 spn. only, 15/5/43 (J.M.B.).
cordata Lep.—Very common.
lineolata Lep.—Common and widely distributed.
 var. **cordatoides** Pries.—Raincliffe Wood, 18/6/43 (W.D.H.).
liberta Klug—Goathland (H.B.).

MONSOMA MacGillivray

- pulverata** (Retz.)—Brockets, Fyling Hall (J.M.B.).

EMPRIA Lepeletier

- baltica** Conde—Maw Wyke (J.M.B.) ; Raincliffe Wood, 12/6/43 (W.D.H.).
liturata (Gmel.)—Forge Valley (G.B.W.).
tridens (Kon.)—Ramsdale, Brockets (J.M.B.); Egton Bridge (H.B.).
alector Bens.—Linger's Fields, Robin Hood's Bay (J.M.B.).

AMETASTEGIA Costa, A.

- equiseti** (Fall.)—Ramsdale (J.M.B.).
glabrata (Fall.)—Ramsdale, Robin Hood's Bay (J.M.B.).

ALLANTUS Panzer

- rufocinctus** (Retz.)—Beaten from hedges among **Rosa** and **Rubus**, Ramsdale, Robin Hood's Bay (J.M.B.).
cinctus (L.)—On garden roses, frequent between early June and late July, Ramsdale, Middlewood Lane, Robin Hood's Bay (J.M.B.); Hole of Horcum (H.B.).
cingulatus (L.)—Robin Hood's Bay (J.M.B.).

ERIOCAMPA Hartig

- ovata** (L.)—Forge Valley (G.B.W.).

ENDELOMYIA Ashmead

- aethiops** (Fabr.)—Frequent on garden roses, Robin Hood's Bay (J.M.B.).

CALIROA Costa, O.

- varipes** (Lep.)—Fyling Hall, 29/6/29 (W.J.F.); Beckhole, 1945 (H.B.).

EUTOMOSTETHUS Enslin

- ehippium** (Panz.)—Brockets, Ramsdale, Raw (J.M.B.); Raincliffe Wood, 18/6/43 (W.D.H.).
luteiventris (Klug)—Common among damp vegetation, especially **Juncus**, during May and June, Robin Hood's Bay area (J.M.B.); Egton Bridge, Hole of Horcum (H.B.); Raincliffe Wood (G.B.W.).

STETHOMOSTUS Benson

- fuliginosus** (Schr.)—Hole of Horcum (H.B.).

MONOPHADNUS Hartig

- pallescens** (Gmel.)—Robin Hood's Bay, Ramsdale (J.M.B.).

ARDIS Konow

- sulcata** (Cam., P.)—On garden roses, Robin Hood's Bay (J.M.B.).

BLENNOCAMPA Hartig

pusilla (Klug)—Hayburn Wyke (G.B.W.).

MONOPHADNOIDES Ashmead

geniculata (Hart.)—Forge Valley (G.B.W.); Robin Hood's Bay (J.M.B.).

waldheimii (Gimm.)—Ramsdale, 30/5/42 (J.M.B.).

confusa (Kon.)—Raw (J.M.B.).

HALIDAMIA Benson

affinis (Fall.)—Ramsdale (W.J.F.); Robin Hood's Bay (J.M.B.).

METALLUS Forbes

albipes (Cam., P.)—Robin Hood's Bay, 14/8/45 (J.M.B.).

SCOLIONEURA Konow

betuleti (Klug)—Seamer Moor (G.B.W.).

PROFENUSA MacGillivray

pygmaea (Klug)—Ramsdale (J.M.B.).

FENUSA Leach

ulmi Sund.—Ramsdale (J.M.B.).

dohrnii (Tischb.)—Ramsdale, Fyling Hall, Brockets (J.M.B.).

PERINEURA Hartig

rubi (Panz.)—Ramsdale, 1 f., 7/6/46 (J.M.B.).

AGLAOSTIGMA Kirby, W. F.

aucuparia (Klug)—Common and generally distributed.

fulvipes (Scop.)—Fyling Hall, -/6/28 (W.J.F.); Rigg, Robin Hood's Bay (J.M.B.).

TENTHREDOPSIS Costa, A.

excisa (Thoms., C. G.)—Hole of Horcum (H.B.).

litterata (Geoffr.)—Seamer Moor (G.B.W.); Fyling Hall (W.J.F.); Robin Hood's Bay (J.M.B.).

nassata (L.)—Very common.

RHOGOGASTER Konow

picta (Klug)—Restricted to areas where broom, *Sarothamnus scoparius* occurs, Ravenscar (J.M.B.).

punctulata (Klug)—Brockets, Ramsdale, Raw (J.M.B.); Hole of Horcum (H.B.); Fyling Hall, -/6/28 (W.J.F.).

viridis (L.)—Very common.

TENTHREDO Linnaeus

maculata Geoffr.—Common and generally distributed.

temula Scop.—Also common.

atra L.—Common.

livida L.—Plentiful.

ferruginea Schr.—Widely distributed.

balteata Klug—Plentiful.

velva Fabr.—Hayburn Wyke, 17/6/24; Raincliffe Wood (W.D.H.).

colon Klug—Forge Valley, Robin Hood's Bay (J.M.B.).

olivacea Klug—Less common than some of the preceding species; Robin Hood's Bay, Hawsker, Ramsdale (J.M.B.).

mioceras (Ensl.)—Ramsdale, Hawsker (J.M.B.).

mesomelas L.—Plentiful.

vespa Retz.—Robin Hood's Bay (J.M.B.).

arcuata Forst.—Very common.

perkinsi (Mor.)—Forge Valley (G.B.W.); Fyling Hall (W.J.F.); Ramsdale (J.M.B.).

PACHYPROTASIS Hartig

antennata (Lep.)—Ramsdale (J.M.B.); Goathland (H.B.).

rapae (L.)—Very common.

MACROPHYA Dahlbom

duodecimpunctata (L.)—Goathland (H.B.).

annulata (Geoffr.)—Fyling Hall, Ramsdale, Robin Hood's Bay (J.M.B.).

CLADIUS Illiger

pectinicornis (Geoffr.)—Robin Hood's Bay (J.M.B.).

PRIOPHORUS Dahlbom

radiatus (Hart.)—Common on hawthorn, *Crataegus*, Robin Hood's Bay, from late May to mid-August (J.M.B.); Scarborough (G.B.W.).

varipes Lep.—Fyling Hall, 24/6/25 (W.J.F.).

PSEUDODINEURA Konow

fuscula (Klug)—Among damp vegetation, Ramsdale (J.M.B.).

MESONEURA Hartig

opaca (Fabr.)—Robin Hood's Bay, 22/5/45 (J.M.B.).

HEMICHROA Stephens

alni (L.)—Fyling Hall, on alder (W.J.F.).

HOPLOCAMPA Hartig

testudinea (Klug)—Sleights (H.B.).

crataegi (Klug)—Ramsdale (J.M.B.); Robin Hood's Bay (H.B.); Scarborough (G.B.W.); Wykeham (W.D.H.).

PLATYCAMPUS Schioedte

luridiventris (Fall.)—Fyling Hall, Ramsdale, Brockets (J.M.B.); Scarborough (G.B.W.); Hole of Horcum (H.B.).

ANOPLONYX Marlatt

duplex (Lep.)—Egton Bridge (H.B.).

CROESUS Leach

varus (de Villaret)—Ramsdale, Ravenscar (J.M.B.).

EUURA Newman

atra (Jur.)—Scarborough (G.B.W.); Littlebeck (H.B.); Harwood Dale (H.J.B.); Robin Hood's Bay, Ravenscar (J.M.B.).

amerinae (L.)—Common on *Salix pentandra* in Troutsdale and Raincliffe Wood (G.B.W.); Robin Hood's Bay (J.M.B.).

testaceipes (Zadd.)—Cornelian Bay on *Salix fragilis* (H.J.B.).

saliceti (Fall.)—Very plentiful on *Salix* during May and June.

venusta (Zadd.)—Common and widely distributed.

PONTANIA Costa, A.

leucosticta (Hart.)—Ramsdale, Raw on *Salix caprea* (J.M.B.).

viminalis (L.)—Littlebeck (H.B.); Cornelian Bay (H.J.B.).

pedunculi (Hart.)—Littlebeck (H.B.); Galls from Ravenscar, Jugger Howe Dale, Staintondale (H.J.B.); Falcon Inn (W.F.).

proxima (Lep.)—Galls abundant.

DINEURA Dahlbom*virididorsata* (Retz.)—Ramsdale on birch (J.M.B.).*stilata* (Klug)—Plentiful on hawthorn, Robin Hood's Bay during June and July (J.M.B.).**NEMATUS** Panzer*lucidus* Panz.—Ramsdale, Raw, Brockets on hawthorn (J.M.B.).**HOLCOCNEME** Konow*crassa* (Fall.)—Robin Hood's Bay, 26/6/46 (J.M.B.).**PTERONIDEA** Rohwer*ferruginea* (Foerst.)—Helwath Beck (H.B.).

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BRACONIDAE

There is a vast field of work to be done here, and we have only a few scattered records.

H.B.—H. Britten fil.

W.D.H.—W. D. Hincks

W.J.F.—W. J. Fordham

G.T.L.—G. T. Lyle

G.B.W.—G. B. Walsh

BRACON Fabricius*anthracinus* Nees—Filey (G.T.L.) ; Flixton, 13/6/43 (W.D.H.).*marshalli* Szépl.—Goathland Moor, 1925 (G.T.L.).*exhilarator* Nees—Raincliffe Wood, 11/6/43 (W.D.H.).**EXOTHECUS** Wesmael*braconius* (Hal.)—Wykeham, 11/6/43 (W.D.H.).**ROGAS** Nees*unipunctator* (Thunb.)—Filey, -/8/22 (W.J.F.) ; Raincliffe Wood, 11/6/43 (W.D.H.).*circumscripatus* Nees—Wykeham, 6/6/45 (W.D.H.) ; Hole of Horcum, 12/6/37 (H.B.).**CHELONUS** Jurine*inanitus* (L.)—Flixton, 12/6/43 (W.D.H.).

APANTELES Foerster*glomeratus* (L.)—Abundant.*difficilis* (Nees)—Hole of Horcum, 1 f., 5/6/37 (H.B.).*fulvipes* (Hal.)—Scarborough, bred from Noctuid larva (G.B.W.), probably common.*meridiana* Hal.—Castle Hill, Scarborough, 13/6/43 (W.D.H.).**MICROGASTER** Latreille*alvearia* (Fabr.)—Scarborough (G.B.W.).**MICROPLITIS** Foerster*tristis* (Nees)—Flixton, 13/6/43 (W.D.H.).**BRACHISTES** Wesmael*tibialis* (Hal.)—Raincliffe Wood, 12/6/43 (W.D.H.).**PYGOSTOLUS** Haliday*falcatus* (Nees)—Beedale, 7/6/45 (W.D.H.).*sticticus* (Fabr.)—Beedale, 7/6/45 (W.D.H.).**BLACUS** Nees*ruficornis* (Nees)—Forge Valley, sweeping, 5/5/23 (G.B.W.).*maculipes* (Wesm.)—Seamer Moor in stack refuse, 4/1/23 (G.B.W.).**MACROCENTRUS** Curtis*marginator* (Nees)—Robin Hood's Bay (W.J.F.).**DIOSPILUS** Haliday*capito* (Nees)—Goathland (G.T.L.).**METEORUS** Haliday*ictericus* (Nees)—Helwath Beck, 26/9/37 (H.B.).**MICROCTONUS** Wesmael*aethiops* (Nees)—Goathland (G.T.L.).**EUPHORUS** Nees*pallipes* (Curt.)—Raincliffe Wood to Forge Valley, 12/6/43 (W.D.H.).**OPIUS** Wesmael*victus* Hal.—Beedale, 7/6/45 (W.D.H.).**CHASMODON** Haliday*apterus* (Nees)—Scalby in cut grass, 23/7/19 (G.B.W.).**PANEREMA** Foerster*inops* Marshall—Forge Valley, 16/9/46 (W.D.H.).**TRACHYUSA** Ruthe*aurora* (Hal.)—Beedale, 7/6/45 (W.D.H.).**TANYCARPA** Foerster*gracilicornis* (Nees)—Beedale, 7/6/45 (W.D.H.).**ALYSIA** Latreille*manducator* (Panz.)—Hole of Horcum, 8/8/37 (H.B.) ; Scarborough (G.B.W.) ; probably common.**PHAENOCARPA** Foerster*ruficeps* (Nees)—Beedale, 6/6/45 (W.D.H.).**RHIZARCHA** Foerster*pubescens* (Curt.)—Beedale, 7/6/45 (W.D.H.).**EPHEDRUS** Haliday*plagiator* (Nees)—Beedale, 7/6/45 (W.D.H.).*lacertosus* (Hal.)—Beedale, 7/6/45 (W.D.H.).

MONOCTONUS Haliday

caricis (Hal.)—Flixton, 13/6/43 (W.D.H.).

APHIDIUS Nees

rosae Hal.—Beedale, 7/6/45 (W.D.H.) ; Scarborough (G.B.W.).

avenae Hal. — Flixton, 14/6/43 (W.D.H.); Beedale, 7/6/45 (W.D.H.).

ervi Hal.—Raincliffe Wood to Forge Valley, 12/6/43 (W.D.H.).

granarius Marshall—Raincliffe Wood, 12/6/43 (W.D.H.).

DYSCRITULUS Hincks

planiceps (Marshall)—Robin Hood's Bay, Thorpe, 17/9/46, cliffs 19/9/46 (A. E. Winter) ; Scarborough, common (G.B.W.).

ICHNEUMONIDAE

The following initials are used :—

H.B.—H. Britten, fil.

W.J.F.—W. J. Fordham

W.D.H.—W. D. Hincks

G.B.W.—G. B. Walsh

STENICHNEUMON Thomson, C. G.

militarius (Thunb.)—Ramsdale, 30/6/29 (W.J.F.).

ratzeburgii (Hart.)—Staintondale, 28/6/26 (G.B.W.).

CRATICHNEUMON Thomson, C. G.

nigritarius (Grav.)—Hole of Horcum, 4/8/37 (H.B.).

fabricator (Fabr.)—Raincliffe Wood, 6/20, Yedmandale, 7/23 (G.B.W.) ; Raincliffe Wood, 12/6/43, males only, very common (W.D.H.).

culex (Muell., O. F.)—Staintondale, 28/6/26, Seamer Moor, 6/26 (G.B.W.) ; Ramsdale, 22/6/24 (W.J.F.) ; Raincliffe Wood, 12/6/43 (W.D.H.).

versator (Thunb.)—Fylinghall, 29/6/29 (W.J.F.).

rufifrons (Grav.)—Forge Valley, Troutsdale, Staintondale, by beating flowers of mountain ash, 28/6/26 (G.B.W.).

lanius (Grav.)—Hayburn Wyke, 17/6/24 (W.J.F.) ; Raincliffe Wood, 6/20 (G.B.W.).

BARICHNEUMON Thomson, C. G.

bilunulatus (Grav.)—Raincliffe Wood, 6/26 (G.B.W.).

locutor (Thunb.)—Staintondale, 28/6/26 (G.B.W.).

ICHNEUMON Linnaeus

nereni Thoms., C.G.—Staintondale (G.B.W.).

xanthorius Forst.—Fylinghall, 7/9/20 (W.J.F.) ; Littlebeck, 17/5/37 (H.B.).

deliratorius L.—Ravenscar (C. T. Bingham) ; Wykeham, 6/6/45, Scarborough Mere, 3/6/43 (W.D.H.).

confusorius Grav.—Raincliffe Wood, 6/20 (G.B.W.).

stramentarius Grav.—Pickering (G.B.W.).

suspiciosus Wesm.—Hole of Horcum, 31/8/37 (H.B.).

sarcitorius L.—Common near Scarborough (G.B.W.).

CHASMIAS Ashmead*motatorius* (Fabr.)—Fylinghall, 6/28 (W.J.F.).**LIMERODES** Wesmael*arctiventris* Boie—Hayburn Wyke (E. A. Elliot).**SPILICHNEUMON** Thomson, C. G.*occisarius* (Fabr.)—Scalby High Moor, 24/8/24 (G.B.W.).**AMBLYTELES** Wesmael*uniguttatus* (Grav.)—Forge Valley, 3/8/22 (W.J.F., G.B.W.).*armatorius* (Forst.)—Raincliffe Wood, Forge Valley (G.B.W.).*palliatorius* (Grav.)—Gristhorpe, 1891 (W. Hewett); Fylinghall, 7/9/20 (W.J.F.).*fossorius* (L.)—Ravenscar, 25/8/23 (T. Stainforth).**PLATYLABUS** Wesmael*pedatorius* (Fabr.)—Fylinghall, 1/7/29 (W.J.F.).*rufus* Wesm.—Hayburn Wyke (G.B.W.); Fylinghall, 29/6/29 (W.J.F.).*vibratorius* (Thunb.)—Troutdale (G.B.W.).**CYCLOLABUS** Heinrich*nigricollis* (Wesm.)—Fylinghall, m., 6/28 (W.J.F.).**EURYLABUS** Wesmael*rufipes* (Steph.)—Fylinghall, 29/6/29 (W.J.F.).**DIADROMUS** Wesmael*trogodytes* (Grav.)—On spruce, Forge Valley, 27/5/24 (G.B.W.).*subtilicornis* (Grav.)—Sweeping, Forge Valley, 5/6/23 (G.B.W.).**AETHECERUS** Wesmael*dispar* Wesm.—Raincliffe Wood (G.B.W.).**MEVESIA** Holmgren*arguta* (Wesm.)—Robin Hood's Bay, 9/27 (W.J.F.).**PHAEOGENES** Wesmael*invisor* Thunb.—On spruce, Goathland (G.B.W.).**ALOMYA** Panzer*debellator* (Fabr.)—Common and widely distributed.**APTESIS** Foerster*abdominator* (Grav.)—Sweeping, Forge Valley, 5/6/26 (G.B.W.).**RHEMBOBIUS** Foerster*perscrutator* (Thunb.)—Raincliffe Wood, 25/4/28 (G.B.W.).**GLYPHICNEMIS** Foerster*profligator* (Fabr.)—Staintondale, 28/6/26 (G.B.W.).*brevis* Grav.—On flowers, Staintondale, 28/6/26 (G.B.W.).*erythrogastra* (Grav.)—Wykeham, 6/6/45 (W.D.H.).**PHYGADEUON** Gravenhorst*variabilis* Grav.—Pickering (G.B.W.).*exiguus* Grav.—Pickering (G.B.W.).*ovatus* Grav.—Staintondale, 28/6/26 (G.B.W.).*gravenhorsti* (Foerst.)—In cut grass, Scalby, 5/7/19 (G.B.W.).**ISCHNURGOPS** Foerster*claviger* (Tasch.)—Raincliffe Wood, 28/6/24 (G.B.W.).*tenerrimus* (Grav.)—With the last.

HEMITELES Gravenhorst

- cinctus* (L.)—Hole of Horcum, 4/8/37 (H.B.).
necator (Fabr.)—Sweeping, Forge Valley, 20/10/23 (G.B.W.).
areator (Panz.)—Hole of Horcum, 4/8/37, 7/5/38 (H.B.) ; Forge Valley (G.B.W.).
similis (Gmel. in L.)—On spruce, Forge Valley, 11/5/24 (G.B.W.).
gravenhorstii (Ratz.)—Raincliffe Wood (G.B.W.).
paradoxus Bridgman—Raincliffe Wood (G.B.W.).
atricapillus Grav.—Scarborough district (G.B.W.).
subzonatus (Grav.)—In cut grass, Scalby, 5/7/19 (G.B.W.).

GELIS Thunberg

- festinans* (Fabr.)—Flamborough, 14/9/25 (G.B.W.).
pulicaria (Fabr.)—Scalby High Moor, 10/9/22 (G.B.W.).
carnifex (Foerst.)—Common.
ochracea (Foerst.)—Beating alder, Forge Valley, 20/8/25 (G.B.W.).
modesta (Foerst.)—Common.
distincta (Foerst.)—Pickering, Forge Valley, 4/9/25, Scalby High Moor, 4/8/21 (G.B.W.).
fraudulenta (Foerst.)—Beating, Cloughton Bank, 29/8/25 (G.B.W.).
attenta (Foerst.)—Hayburn Wyke, 27/5/19 (G.B.W.).
agilis (Fabr.)—Scarborough district (G.B.W.).
unicolor (Foerst.)—Forge Valley (G.B.W.).
insolens (Foerst.)—Robin Hood's Bay, 19/6/37, 1/7/37 (H.B.).
melanocephala Schrank—Raincliffe Wood, 10/8/25 (G.B.W.) ; Hole of Horcum, 13/7/37 (H.B.).

POLYRHEMBIA Foerster

- tenebricosa* Grav.—Sweeping, Forge Valley, 5/5/23, Raincliffe Wood, 28/6/24 (G.B.W.).

STILPNUS Gravenhorst

- gagates* Grav.—Sweeping, Forge Valley, 20/10/23 (G.B.W.).

PYCNOCRYPTUS Thomson, C. G.

- director* (Thunb.)—Scarborough (G.B.W.).

AGROTHEREUTES Foerster

- abbreviator* (Fabr.)—Raincliffe Wood (G.B.W.).

PIMPLA Fabricius

- instigator* (Fabr.)—Goathland, 15/10/36, f. (H.B.).
contemplator (Muell., O. F.) — Fylinghall, Forge Valley, 5/6/26 (G.B.W.).
turionellae (L.)—Raincliffe Wood, Hayburn Wyke (G.B.W.).

ITOPLECTIS Foerster

- maculator* (Fabr.)—Hayburn Wyke, Staintondale, Forge Valley (G.B.W.) ; Sleights, 29/9/37 (H.B.).
alternans (Grav.)—Goathland (G.B.W.).

APECHTHIS Foerster

- compunctor* (L.)—Scarborough (Y.N.U. Excn., 1882) ; Seamer Moor (G. Tyers).
rufata (Gmel. in L.)—Seamer Moor (G. Tyers).

PERITHOUS Holmgren

divinator (Rossi)—Helwath Beck, 25/8/35 (H.B.).

TROMATOBIA Foerster

ovivora (Boh.)—Fylinghall, 6/28 (W.J.F.).

oculatoria Fabr.—Raincliffe Wood to Forge Valley, 12/6/43, f. (W.D.H.).

CLISTOPYGA Gravenhorst

incitator (Fabr.)—Ellerbeck, 5/8/36 (H.B.) ; Robin Hood's Bay, 6/34 (W.J.F.).

RHYSSA Gravenhorst

persuasoria (L.)—Owing to its large size and striking appearance, there are numerous records of this insect.

GLYPTA Gravenhorst

bifoveolata Grav.—Staintondale, 28/6/26, Raincliffe Wood (G.B.W.).

PHYTODIETUS Gravenhorst

ornatus (Desv.)—Staintondale, 9/23 (W.J.F.).

gelitorius (Thunb.)—Staintondale, 28/6/26 (G.B.W.).

LAMPRONOTA Curtis

catenator (Panz.)—Fylinghall (G.B.W.).

bilineata (Grav.)—Fylinghall, 6/28 (W.J.F.).

LISSONOTA Gravenhorst

cylindrator (de Vill., C. J.)—Common and widely distributed from June to September.

bellator (Grav.)—Also common and widely distributed.

CYLLOCERIA Schioedte

caligata (Grav.)—Robin Hood's Bay, 9/27 (W.J.F.).

EXETASTES Gravenhorst

cinctipes (Retz.)—Scarborough (G.B.W.).

ISCHNOCEROS Gravenhorst

rusticus (Geoffr. in Fourcr.)—Fylinghall, 6/28 (W.J.F.).

TRYPHON Fallén

vulgaris Holmgr.—Scarborough, 20/7/26 (G.B.W.).

PERILISSUS Holmgren

rufoniger (Grav.)—Fylinghall, 8/28 (W.J.F.).

spilonotus (Steph.)—Forge Valley, 6/26 (G.B.W.).

luteolator (Grav.)—Robin Hood's Bay, 10/6/24 (W.J.F.) ; Scalby (G.B.W.).

PRIONOPODA Holmgren

stictica (Fabr.)—Helwath Beck, 26/6/37 (H.B.).

HADRODACTYLUS Foerster

tiphae (Geoffr. in Fourcr.)—Troutdale (G.B.W.).

GENARCHES Foerster

sulphuratus Grav.—Staintondale, 9/27 (W.J.F.).

LAMACHUS Foerster

eques (Hart.)—Goathland ex *Neodiprion sertifer* (Geoffr.), 5/32 (W.J.F. & R. J. Flintoff).

MESOLEIUS Holmgren

filicornis Holmgr.—Beedale (G.B.W.).

SCOPESES Foerster*bicolor* (Grav.)—Raincliffe Wood (G.B.W.).**EXOCHUS** Gravenhorst*decoratus* (Holmgr.)—Staintondale, 23/6/27 (G.B.W.).**DIPLAZON** Nees*graculus* (Grav.)—Ramsdale, 7/9/20 (W.J.F.).*deletus* (Thoms., C.G.)—Rare ; Thorpe, 24/6/24 (W.J.F.).*annulatus* (Grav.)—Flixton and Staxton, 14/6/43, m. (W.D.H.).*albosignatus* (Grav.)—Raincliffe Wood, 6/24 (G.B.W.).*tetragonus* (Thunb.)—Raincliffe Wood, Hayburn Wyke, Scarborough on window, 20/8/26 (G.B.W.) ; Fylinghall, 6/28 (W.J.F.).*laetatorius* (Fabr.)—Common.*pectoratorius* (Grav.)—Staintondale, on mountain ash (G.B.W.) ; Fylinghall, 26/6/29 (W.J.F.).*caudatus* (Thoms., C.G.)—Wykeham, 6/6/45 (W.D.H.).*dimidiatus* (Schrank)—Scarborough (G.B.W.).*pictus* (Grav.)—Fylinghall, 29/6/29, Ramsdale, 30/6/29 (W.J.F.).*signatus* (Grav.)—Fylinghall, 6/28, Robin Hood's Bay, 9/27 (W.J.F.).**PROMETHES** Foerster*cognatus* (Holmgr.)—Fylinghall, 6/28 (W.J.F.).*pulchellus* (Holmgr.)—Forge Valley, 22/6/24 (G.B.W.).**OPHION** Fabricius*luteus* (L.)—Fairly common, especially on the moors ; bred from *Spilosoma lutea* (Hufn.), 28/6/24 (G.B.W.).*stigmaticus* Morl.—Helwath Beck, 26/9/37 (H.B.).**ALLOCAMPTUS** Foerster*undulatus* (Grav.)—Fylingdale Moor, 13/7/35, m. (H.B.).**BLAPTOCAMPUS** Thomson, C. G.*nigricornis* (Wesm.)—Helwath Beck, 26/9/37 (H.B.).**AGRYPON** Foerster*flaveolatum* (Grav.)—Hole of Horcum, 4/8/37 (H.B.).**CAMPOPLEX** Gravenhorst*nitidulator* Holmgr.—Raincliffe Wood to Forge Valley, 12/6/43 (W.D.H.).**EULIMNERIA** Schmiedeknecht*albida* (Gmel. in L.)—Primrose Valley, Filey, 12/7/24 (G.B.W.).**NEMERITIS** Holmgren*macrocentra* (Grav.)—Staintondale, 24/5/24 (G.B.W.).*canescens* (Grav.)—Bred from *Ephestia sericarium* (Scott), Scarborough (G.B.W.).**PHOBOCAMPE** Foerster*crassiuscula* (Grav.)—Fylinghall, 6/28 (W.J.F.).**ECPHOROPSIS** Ashmead*fuscipes* (Holmgr.)—Ramsdale, 7/9/20 (W.J.F.).**NEPIERA** Foerster*collector* (Thunb.)—Robin Hood's Bay, 9/27 (W.J.F.).

ANGITIA Holmgren

chrysosticta (Gmel. in L.) var. *fenestralis* (Holmgr.)—Robin Hood's Bay, 9/27 (W.J.F.).

ANILASTUS Foerster

notatus (Grav.)—Fylinghall, 24/6/29 (W.J.F.).

HOLOCREMNUS Foerster

argentatus (Grav.)—Raincliffe Wood (G.B.W.).

PARABATES Foerster

cristatus Thoms., C. G.—Raincliffe Wood (G.B.W.).

PANISCUS Schrank

testaceus (Grav.)—Flixton, 14/6/43 (W.D.H.).

MESOCHORUS Gravenhorst

fulgurans Curt.—Forge Valley (G.B.W.).

giberius (Thunb.)—Forge Valley (G.B.W.).

ORTHOPELMA Taschenberg

mediator (Thunb.)—Bred in abundance from galls of *Rhodites rosae* L., and probably common all over the district.

ISURGUS Foerster

morionellus (Holmgr.)—By sweeping, Forge Valley, 5/5/23 (G.B.W.).

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CYNIPOIDEA—GALL WASPS

References:—

1. H. Britten fil.—personal record-book.
2. J. M. Brown—"Additional Plant Galls from the Scarborough District", *Naturalist*, 1920, pp.73-4.
3. H. J. Burkill—"Plant Galls observed near Scarborough, 1921", *Naturalist*, 1922, pp. 193-6.
4. W. Falconer—"Plant Galls from the Scarborough District", *Naturalist*, 1919, pp. 392-3.
5. G. B. Walsh—personal record-book.

CYNIPIDAE

RHODITES Hartig

rosae (L.)—Common; from a gall found near Scalby were bred 13 males and 14 females, a most unusual occurrence in a species which is normally parthenogenetic (G.B.W.).

spinossissimae Gir.—Thornton-le-Dale (G.B.W.).

eglanteriae Hart.—Fairly common.

LIPOSTHENUS Foerster

latreillei (Kieff.)—Lady Edith's Drive on *Nepeta glechoma* (G.B.W.).

GILLETTEA Ashmead

taraxaci Ashm.—Scarborough (G.B.W.).

AULACIDEA Ashmead

hypochoeridis (Kieff.)—Ravenscar, 5/8/34 (H.B.).

hieracii (Bouché) — Near Ravenscar (H.J.B.); Scarborough (G.B.W.); Ramsdale (H.B.).

XESTOPHANES Foerster

potentillae (Retz.)—Oliver's Mount on *Potentilla reptans* (H.J.B.); Hackness (G.B.W.).

brevitarsis (Thoms., C. G.)—Brompton Moor and Staintondale (H.J.B.). Generally distributed on the moors between Robin Hood's Bay and the cliffs near Scalby Mills (J.M.B.).

DIASTROPHUS Hartig

rubi (Bouché)—Sleights, 2/5/35 (F. M. Sutcliffe); Grosmont, 9/5/36 (H.B.).

BIORHIZA Westwood

pallida (Oliv.)—Sleights, 17/5/36; Littlebeck, 13/9/36 (H.B.); Hackness Park (G.B.W.).

ADLERIA Rohwer and Fagan

kollari (Hart.)—Common and generally distributed; it varies in numbers a good deal from year to year.

ANDRICUS Hartig

testaceipes Hart.—Scarborough (J.M.B.).

quercus-radici (Fabr.)—Sleights, 17/5/36 (H.B.).

f. trilineatus Hart.—Sleights, Littlebeck (H.B.).

quercus-corticis (L.)—Sleights (H.B.).

fecundator (Hart.)—Common; Sleights (H.B.); Hayburn Wyke (H.J.B.); Seamer Moor, Raincliffe Wood (G.B.W.).

f. pilosus Adl.—Sleights (H.B.).

ostreus (Hart.)—Common and generally distributed.

curvator Hart. **f. collaris** (Hart.)—Beckhole, Sleights, Littlebeck (H.B.).

albopunctatus (Schlecht.)—Littlebeck (H.B.).

marginalis (Schlecht.)—Hayburn Wyke, one example (W.F.).

quadrilineatus Hart.—Sleights (H.B.).

CYNIPS Linnaeus

quercus-folii L.—Littlebeck, Bloody Beck (H.B.).

f. taschenbergi (Schlecht.)—Harwood Dale (H.J.B.).

longiventris Hart.—Ellerburn, Hayburn Wyke, Harwood Dale (H.J.B.); Littlebeck (H.B.).

f. similis Adl.—Raincliffe Wood (G.B.W.).

divisa Hart.—Common.

f. verrucosa (Schlecht.)—Common.

agama Hart.—Scarborough (J.M.B.) ; Harwood Dale (H.J.B.).

NEUROTERUS Hartig

tricolor (Hart.) *f. fumipennis* Hart.—Sleights, Littlebeck (H.B.).

albipes (Schenck)—Fylinghall (H.J.B.).

f. laeviusculus Schenck—Hayburn Wyke, Bloody Beck (H.J.B.) ;
Sleights, Littlebeck (H.B.) ; Scarborough (G.B.W.).

quercus-baccarum (L.)—Common.

f. lenticularis (Oliv.)—Common.

numismalis (Geoffr.)—Common.

f. vesicator (Schlecht.)—Common.

FIGITES Latreille

subapterus Walk.—This species is not catalogued by Kloet and Hincks, but a single specimen taken at Scalby Mills in shore-refuse was referred by C. Morley to this inadequately described species, "Ent. Mag." II, p. 117. (G.B.W.).

ACULEATA—ANTS, WASPS and BEES

The following records have been compiled from :—

Naturalist—1930, pp. 241-6, 363-9.

1931, pp. 155-8.

1932, pp. 233-6, 256-9, 279-82, 325-9.

1937, pp. 105-7.

(R.B. and W.J.F.).

Record book of the Scarborough Field Naturalists' Society.

Personal diary of H. Britten.

The initials refer to the following collectors :—

D.W.B.—D. W. Bevan

H.B.—H. Britten fil.

H.J.B.—H. J. Burkill

R.B.—R. Butterfield

F.E.—F. Elgee

W.J.F.—W. J. Fordham

W.C.H.—W. C. Hey

G.H.L.—G. H. Lowe

W.P.—W. Pearson

M.P.—M. Pittam

T.S.—T. Stainforth

E.A.W.—E. A. Wallis

G.B.W.—G. B. Walsh

DRYINIDAE

ANTEON Jurine

S. CHELOGYNUS Haliday

fulviventre (Hal.)—Ellerbeck, 3/8/36, (H.B.).

Homoptera parasitised by Dryinid larvae have been found commonly in Forge Valley, but the species is (are) unknown, (G.B.W.).

CHRYSIDIDAE

CHRYISIS Linnaeus

ignita (L.)—Common ; Fylinghall, (W.J.F.) ; Helwath Beck, Fen Bog, (H.B.) ; abundant in Holbeck Gardens, (G.B.W.).

ruddii Shuck.—Fen Bog, 11/7/37, (H.B.).

viridula L.—Common in Holbeck Gardens, (G.B.W.).

SAPYGIDAE

SAPYGA Latreille

quinquepunctata (Fabr.)—Burrows in palings, etc., Robin Hood's Bay, -/6/24 (W.J.F.).

MUTILLIDAE

MUTILLA Linnaeus

europaea L.—SOLITARY "ANT." Scarce but very widely distributed on the moors. Ellerburn Moor, (W.P.) ; Robin Hood's Bay, (F.E., T.S., numerous records) ; Lilla Cross, (E.A.W.) ; Stony Marl Moor, (G.B.W.) ; Wykeham Moor, (M.P.).

FORMICIDAE

FORMICOXENUS Mayr

nitidulus (Nyl.)—Occurs in the nests of *Formica rufa* and *F. pratensis*. Quite common at Barns Cliff, (G.B.W.) and Helwath Beck, (H.B.).

MONOMORIUM Mayr

pharaonis (L.)—An introduced species, nests in a grocer's shop in Scarborough, (G.B.W.).

MYRMICA Latreille

laevinodis Nyl.—RED ANT. Common and widely distributed.

var. *ruginodis-laevinodis* For.—Hole of Horcum, 4/8/37, (H.B.).

ruginodis Nyl.—Common.

sulcinodis Nyl.—Robin Hood's Bay, (G.H.L.).

scabrinodis Nyl. var. *sabuleti* Mein.—North Cliff, Robin Hood's Bay, Beast Cliff, 1937, (G.H.L.).

lobicornis Nyl.—One nest each at North Cliff and Little Wood, Robin Hood's Bay and at Beast Cliff, 1937, (G.H.L.).

LEPTOTHORAX Mayr

acervorum (Fabr.)—Chiefly in stumps of trees. Fairly common and widely distributed.

LASIUS Fabricius

niger (L.)—BLACK ANT. Grosmont, Beckhole, Hole of Horcum, (H.B.) ; Harwood Dale, Silpho Moor, (G.B.W.).

flavus (Fabr.)—YELLOW ANT. Fairly common and widely distributed.

umbratus (Nyl.)—Robin Hood's Bay, (H.B.).

mixtus (Nyl.)—Robin Hood's Bay, (H.B.).

FORMICA Linnaeus

rufa L.—WOOD ANT. Apparently commoner formerly than now.

Scarborough, common in woods, (T.W.) ; now very local. Barns Cliff ; of late a number of colonies have been started at the far end of Silpho Moor on the sides of the path running down to Whisperdales ; at first there were few myrmecophiles but the numbers of such species are now increasing, (G.B.W.) ; Helwath Beck, (H.B., G.B.W.).

var. **rufo-pratensis** For.—Jugger Howe Dale, (G.H.L.) ; Helwath Beck, both females and workers, (H.B.).

var. **alpina** Santschi—Helwath Beck, 5/7/37, (H.B.).

pratensis Retz.—Helwath Beck, (H.B.).

Dr. I. H. H. Yarrow (Trans. Soc. Brit. Ent., Vol. 12, Part 1, 1955) considers that the *Formica rufa* group consists of four distinct species, **F. rufa** L. and **F. nigricans** Emery in the south and **F. lugubris** Zett. and **F. aquilonia** Yarr. in the north. All Yorkshire wood ants are referable to **F. lugubris**, specimens sent to the British Museum (Natural History) have been confirmed as this species (Feb., 1956). Accordingly all references to **Formica rufa** or its varieties, or to **F. pratensis** in this volume should be emended to read **Formica lugubris** Zett.

fusca L.—Common and generally distributed.

var. **rubescens** For.—Fylingdales Moor, 5/9/36, (H.B.).

POMPILIDAE

PRIOCNEMIS Schioedte

perturbator (Harr., M.)—Levisham, preys on spiders, -/6/24, (R.B.).

minor (Zett.)—Goathland, 14/9/35, (H.B.).

exaltatus (Fabr.)—Robin Hood's Bay, -/9/27, (W.J.F.).

pusillus Sch.—Scarborough, (H.J.B.).

gracilis Haupt—Fylingdales Moor, 5/9/36, (H.B.).

POMPILUS Fabricius

trivialis Dahlb.—Scarborough, (D.W.B.).

VESPIDAE

ODYNERUS Latreille

spinipes (L.)—Burrows in banks and makes a projecting tunnel of grains of sand, etc. Fylinghall, 21/6/24, and -/6/28 (W.J.F.) ; Scarborough, at bottom of path through Holbeck Gardens, -/6/34, (G.B.W.).

ANCISTROCERUS Wesmael

callosum (Thoms., C.G.)—Flixton sand-pits, (W.D.H., "Nat," 1943, p. 123).

parietum (L.)—West Ayton, plentiful on flowers of **Centaurea** and **Epilobium** (W.C.H.) ; Scarborough, common, (G.B.W.).

pictus (Curt.)—Scarborough Mere, 13/6/43, (W.D.H.).

trimarginatus (Zett.)—Fylinghall, -/6/28, (W.J.F.).

SYMMORPHUS Wesmael

sinuatissimus Rich.—Fylinghall, 26/6/29, (W.J.F.).

VESPULA Thomson, C. G.

vulgaris (L.)—Very common.

germanica (Fabr.)—Common.

rufa (L.)—Fairly common and widely distributed. Very fond of the flowers of *Centaurea*, *Cotoneaster* and *Pyrus japonica*, (W.C.H.).

austriaca (Panz.)—Goathland, a female, (R.B.).

sylvestris (Scop.)—Scarborough district, common, (G.B.W.) ; Fylinghall, (W.J.F.) ; Sleights, (H.B.).

norvegica (Fabr.)—Common; males on *Heraclium* in July (W.C.H.). Nests in gooseberry bushes.

SPHECIDAE

TRYPOXYLON Latreille

figulus (L.)—Fylinghall, -/6/26, (W.J.F.) ; Fen Bog, 11/7/37, (H.B.).

clavicerum Lep.—Helwath Beck, 26/7/35, (H.B.).

PEMPHREDON Latreille

lugubris (Fabr.)—Helwath Beck, 3/8/35, (H.B.) ; Fylinghall, 26/6/29, (W.J.F.).

CEMONUS Panzer

shuckardi Mor.—Robin Hood's Bay, 24/6/24, a male with abnormal neururation, the recurrent nervure nearly absent, (W.J.F.).

PASSALOECUS Shuckard

monilicornis Dahlb.—Sleights, 28/7/35, (H.B.).

MIMESA Shuckard

shuckardi Wesm.—Thorpe, 24/6/24, (W.J.F.).

PSENUlus Kohl

atratus (Fabr.)—Robin Hood's Bay, -/9/27, (W.J.F.).

CRABRO Fabricius

cribarius (L.)—Probably common ; Crosscliff, m. and f., July-Aug., 1915 (D.W.B.).

COELOCRABRO Thomson, C. G.

walkeri (Shuck.)—Goathland, 14/7/35, (H.B.).

leucostomus (L.)—Goathland, 14/7/35; Sleights, 28/7/35; Beckhole, 9/6/36, (H.B.).

CROSSOCERUS Lepeletier and Brullé

palmipes (L.)—Goathland, 14/7/35, Helwath Beck, 3/8/35, (H.B.).

varus Lep. & Brull.—Helwath Beck, 3/8/35, Goathland, 14/7/35, (H.B.) ; Flixton sand-pits, 13/6/43, (W.D.H.).

elongatulus (v. d. Lind.)—Hayburn Wyke, 4/9/20, (W.J.F.) ; nesting in stone walls, Scarborough, Ruston, Mowthorpe (D.W.B.).

BLEPHARIPUS Lepeletier and Brullé

dimidiatus (Fabr.)—Hayburn Wyke, 4/9/20, (W.J.F.).

confusus (Schulz)—Helwath Beck, 20/7/35, (H.B.).

CLYTOCHRYsus Morawitz

planifrons (Thoms., C.G.)—Hackness, with the next species.

cavifrons (Thoms., C.G.)—Helwath Beck, 20/7/36, (H.B.) ; Hackness, 11/7/36, (C.A.C., Nat., 1936, p. 210).

chrysostomus (Lep. & Brull.)—Beckhole, 3/8/36, (H.B.) ; Hole of Horcum, 30/6/37, (H.B.).

SOLENIUS Lepeletier and Brullé

continuus (Fabr.)—Raincliffe Wood, 13/6/43, (W.D.H., Nat., 1943, p. 122).

RHOPALUM Stephens

clavipes (L.)—Ellerbeck, 8/8/36, Sleights, 28/7/35, Hole of Horcum, 26/6/37, 4/8/37, (H.B.); Raincliffe Wood, 13/6/43, (W.D.H., Nat., 1943, p. 122).

LINDENIUS Lepeletier and Brullé

albilabris (Fabr.)—Near Raincliffe Wood, 1918 (D.W.B.).

NYSSON Latreille

spinus (Forst.)—Raincliffe Wood, 11/6/43, taken with **Gorytes mystaceus**, its host, (W.D.H.).

GORYTES Latreille

mystaceus (L.)—Fylinghall, 6/6/28, (W.J.F.); Scarborough Mere, 11/6/43, (W.D.H.).

MELLINUS Fabricius

arvensis (L.)—Wykeham in large numbers, m. and f., 6/8/18 (D.W.B.).

APIDAE

COLLETES Latreille

succincta (L.)—Scarborough, (D.W.B.); Fylingdales Moor, 5/9/36, (H.B.); Ravenscar, (W.J.F.).

fodiens (Geoff.)—Fylingdales Moor, males, 5/9/36, (H.B.). Its parasite is **Epeolus variegatus** (L.).

HALICTUS Latreille

rubicundus (Christ)—Common. Its inquiline is **Sphecodes gibbus** (L.).

calceatus (Scop.)—Common on ragwort.

albipes (Fabr.)—Common on yellow composites.

fratellus Pér. — Scarborough, (D.W.B.); Staintondale, 4/9/20, (W.J.F.).

nitidiusculus (Kirby, W.)—Scarborough, (D.W.B.); Goathland, 14/9/35, (H.B.). Its inquiline is **Nomada sheppardana** (Kirby, W.).

rufitarsis Zett.—Egton Bridge, 1/6/35, (H.B.).

tumulorum (L.)—Scarborough, (D.W.B.); Goathland, (R.B., H.B.); Littlebeck, 25/8/35, (H.B.).

smeathmanellus (Kirby, W.)—Common. Scarborough, (D.W.B.); Staintondale, 4/9/20, (W.J.F.); Ellerbeck, 8/8/36, Sleights, 17/5/36, Beckhole, 1/6/36, (H.B.).

leucopus (Kirby, W.)—Scarborough, (D.W.B.).

SPHECODES Latreille

gibbus (L.)—Scarborough, (D.W.B.), associated with **Halictus rubicundus** (Christ).

monilicornis (Kirby, W.)—Scarborough, (D.W.B.), associated with **Halictus** spp. and **Andrena flavipes** Panz.

fasciatus (von Hag.)—Scarborough, (D.W.B.), associated with **Halictus** spp.

ANDRENA Fabricius

haemorrhoea (Fabr.)—Common in spring on sallow bloom. At times many hundreds of burrows are found in close proximity. Parasitised by *Nomada ruficornis* (L.).

nigroaenea (Kirby, W.)—Scarborough, (D.W.B.).

bicolor (Fabr.)—Scarborough, (D.W.B.).

angustior (Kirby, W.)—Helwath Beck, 1/5/37, (H.B.).

jacobi Perk., R. C. L.—Common. Parasitised by *Nomada marshamella* and *N. flava* Panz.

fucata Smith, F.—Robin Hood's Bay, male, 14/6/24, (W.J.F.).

lapponica Zett.—Helwath Beck, 1/5/37, (H.B.).

clarkella (Kirby, W.)—Fairly common on sallow catkins. Parasitised by *Nomada leucophthalma* (Kirby, W.).

fuscipes (Kirby, W.)—Scarborough, (D.W.B.) ; Goathland, 14/9/35, (H.B.).

saundersella Perk., R. C. L.—Scarborough, (D.W.B.) ; Egton Bridge, 1/6/35, (H.B.).

wilkella (Kirby, W.)—Robin Hood's Bay, male, 14/6/25, (W.J.F.) ; Goathland, (R.B.).

MELECTA Latreille

punctata (Fabr.)—Scarborough, (D.W.B.). Parasitic on *Anthophora acervorum* (L.).

NOMADA Scopoli

stigma Fabr.—Scarborough, (D.W.B.). Attached to *Andrena humilis* Imh.

goodeniana (Kirby, W.)—Scarborough, (D.W.B.) ; Ravenscar, 1/9/20, (W.J.F.). Parasitic on *Andrena pubescens* Oliv., *A. nigroaenea* (Kirby, W.) and *A. thoracica* (Fabr.).

lathburiana (Kirby, W.)—Levisham, -/6/24, (R.B.). Parasitic on *Andrena cineraria* (L.).

marshamella (Kirby, W.)—Common. Parasitic on *Andrena jacobi* Perk., R. C. L.

ruficornis (L.)—Common. Parasitic on several spp. on *Andrena*.

leucophthalma (Kirby, W.)—Scarborough, (D.W.B.). Occurs with *Andrena clarkella* (Kirby, W.).

fabriciana (L.)—Common in April and May. Parasitic on *Andrena nigroaenea* (Kirby, W.), *A. bicolor* (Fabr.), and *A. angustior* (Kirby, W.).

flavoguttata (Kirby, W.)—Hole of Horcum, 12/6/37, (H.B.). Parasitic on *Andrena saundersella* Perk., R.C.L., *A. subopaca* Nyl., and *A. parvula* (Kirby, W.).

MEGACHILE Latreille

centuncularis (L.)—Scarborough, cutting rose leaves, fairly common, (D.W.B.).

ligniseca (Kirby, W.)—Scarborough, (D.W.B.).

COELIOXYS Latreille

elongata Lep.—Scarborough, occurs with *Megachile* spp., and *Osmia rufa* (L.).

inermis (Kirby, W.)—Scarborough, (D.W.B.). Associated with *Megachile centuncularis* (L.).

OSMIA Panzer

rufa (L.)—Scarborough, (D.W.B.) ; common, (G.B.W.).

BOMBUS Latreille

terrestris (L.)—Very common, our earliest *Bombus*.

lucorum (L.)—Common.

lapidarius (L.)—Common.

pratorum (L.)—Common, especially on flowers of *Rubus*, (W.C.H.).

jonellus (Kirby, W.)—Very common at West Ayton on flowers of *Campanula glomerata* (W.C.H.).

lapponicus (Fabr.)—Sleights (Dr. Robson).

hortorum (L.)—Common ; at West Ayton it varies very much in size, (W.C.H., 1882).

subterraneus (L.)—Scarborough, (D.W.B.), a dark form common at West Ayton, (W.C.H.).

distinguendus Mor.—Queens in Yedmandale in May on *Orchis mascula*, with pollinia on their heads ; later many queens and workers, generally on *Carduus lanceolatus*. Particularly abundant in upland lanes towards the moors, (W.C.H.).

runderarius (Muell., O. F.)—Goathland, -/6/24 (R.B.).

sylvarum (L.)—West Ayton, not plentiful, (W.C.H.) ; Scarborough, a worn female, (D.W.B.).

agrorum (Fabr.)—Very common ; at West Ayton, (1908) it varied very much in colour, the abdomen in some males being black.

muscorum (L.)—West Ayton, -/8/08, on *Carduus lanceolatus* ; on the carrs and in a clover field, (W.C.H.).

PSITHYRUS Lepeletier

rupestris (Fabr.)—Parasitic on *Bombus lapidarius* (L.). Ravenscar, male, -/9/30, (W.J.F.) ; East Ayton, female, (W.C.H.) ; Seamer Moor, males common on knapweed at end of August, 1908, (W.C.H.).

vestalis (Geoffr.)—Parasitic on *Bombus terrestris* (L.), West Ayton carrs on ragwort, (W.C.H.) ; Robin Hood's Bay, -/6/24, (W.J.F.).
var. *amoenus*—Two specimens on the carrs near West Ayton, (W.C.H.).

barbutellus (Kirby, W.)—Parasitic on *Bombus hortorum* (L.). Scarborough, (D.W.B.). West Ayton, fairly common in gardens, (W.C.H.).

campestris (Panz.)—Parasitic on *Bombus agrorum* (Fabr.). West Ayton, large numbers of males on knapweed in lane to Seamer Moor. Forge Valley, a black variety, -/9/08, (W.C.H.) ; Scarborough, (D.W.B.) ; Goathland, (R.B.).

sylvestris Lep.—Parasitic on *Bombus pratorum* (L.). West Ayton, not uncommon in gardens, (W.C.H.) ; Scarborough, (D.W.B.).

APIS Linnaeus

mellifera (L.)—Very common.

Order DIPTERA — TWO-WINGED FLIES

G. B. Walsh

The following list of local Diptera has been compiled from the undermentioned sources :—

- a. The record-books of H. Britten fil., the late W. J. Fordham, and G. B. Walsh ;
- b. The record-book of local galls compiled by J. M. Gloag ;
- c. The lists of flies captured on excursions of the Yorkshire Naturalists' Union within our area and published in the ' Naturalist ' ;
- d. The lists of local galls published in the ' Naturalist ' .

Most of the species collected by W. J. Fordham and G. B. Walsh were identified by highly competent authorities. The whole of Dr. Fordham's collection was destroyed by enemy action in Hull. We are deeply indebted to Mr. R. L. Coe for his very helpful advice and for checking the list and to the late Mr. C. A. Cheetham for help and advice extending over many years.

The following initials are used :—

R.S.B.—R. S. Bagnall	J.M.G.—J. M. Gloag
E.G.B.—E. G. Bayford	E.F.G.—E. F. Gilmour
H.B.—H. Britten fil.	P.H.G.—P. H. Grimshaw
J.M.B.—J. M. Brown	J.W.H.H.—J. W. Heslop Harrison
H.J.B.—H. J. Burkill	W.D.H.—W. D. Hincks
C.A.C.—C. A. Cheetham	E.C.H.—E. C. Horrell
F.W.E.—F. W. Edwards	W.D.R.—W. D. Roebuck
W.F.—W. Falconer	H.W.T.—H. W. Thompson
W.J.F.—W. J. Fordham	A.J.W.—A. J. Wallis
G.E.F.—G. E. Frisby	G.B.W.—G. B. Walsh
V.C.H.—Victoria County History	

ORTHORRHAPHA

NEMATOCERA

TIPULIDAE — DADDY-LONG-LEGS, CRANE-FLIES

TIPULA Linnaeus

S. ACUTIPULA Alexander

fulvipennis De G.—Pickering, 8/6/43, Hackness, 11/7/36 (C.A.C.).
maxima Poda—Widely distributed.

S. SCHUMMELIA Edwards, F. W.

variicornis Schumm.—Pickering, 4-6/6/38 (C.A.C.).

S. VESTIPLEX Bezzi

scripta Meig.—Widely distributed.

S. TIPULA s. s.

variipennis Meig.—Widely distributed.

- hortulana* Meig.—Robin Hood's Bay, 23/6/24 (H.B.); Pickering, 4-6/6/38 (C.A.C.).
- rufina* Meig.—Sleights, 29/9/37 (H.B.).
- unca* Wied.—Fylinghall, 1928 (W.J.F.); Hackness, 11/7/36 (C.A.C.).
- marmorata* Meig.—Hole of Horcum, 31/8/37 (H.B., C.A.C., F.W.E.).
- obsoleta* Meig.—Goathland, 30/9/37 (H.B.).
- staegeri* Niels.—Goathland, 30/9/37, Sleights, 2/10/37 (H.B.).
- oleracea* (L.)—Common.
- paludosa* Meig.—Common.
- vernalis* Meig.—Pickering, 4-6/6/38, Wykeham, 6/6/45 (C.A.C.).
- lateralis* Meig.—Common.
- pruinosa* Wied.—Fylinghall, 1928 (W.J.F.).
- luteipennis* Meig.—Helwath Beck, 26/9/37 (H.B.).
- pagana* Meig.—Hole of Horcum, 31/8/37, Sleights, 29/9/37, Goathland, 30/9/37 (H.B.).
- luna* Westh.—Fylinghall, 1928 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).
- S. LUNATIPULA** Edwards, F. W.
- fascipennis* Meig.—Scarborough, 11/6/43 (C.A.C.).
- cava* Ried.—Hackness, 11/7/36 (C.A.C.).
- NEPHROTOMA** Meigen
- crocata* (L.)—Not uncommon at Scarborough (G.B.W.).
- flavipalpis* (Meig.)—Ramsdale, 7/9/20 (W.J.F.).
- maculata* (Meig.)—Widely distributed.
- flavescens* (L.)—Hackness, 11/7/36, Wykeham, 6/6/45 (C.A.C.).
- TANYPTERA** Latreille
- strata* (L.)—Sleights, 1936 (H.B.).
- CTENOPHORA** Meigen
- pectinicornis* (L.)—Pickering, 4-6/6/38, (C.A.C.); bred from larvae in rotten wood, Raincliffe Wood, 1924 (G.B.W.).
- CYLINDROTOMA** Macquart
- distinctissima* (Meig.)—Pickering, 4-6/6/38, Wykeham, 6/6/45 (C.A.C.).
- LIMONIA** Meigen
- S. LIMONIA** s. s.
- nubeculosa* Meig.—Pickering, 4-6/6/38 (C.A.C.).
- flavipes* (Fabr.)—With the last.
- tripunctata* (Fabr.)—With the last; Wykeham, 6/6/45 (C.A.C.).
- macrostigma* Schumm.—Helwath Beck, 26/9/37 (H.B.); Hackness, 11/7/36 (C.A.C.).
- S. RHIPIDIA** Meigen
- maculata* (Meig.)—Sleights, 29/9/37; Goathland, 30/9/37 (H.B.).
- PEDICIA** Latreille
- S. PEDICIA** s. s.
- rivosa* (L.)—Sleights, 29/9/37 (H.B.); Ramsdale, 1933 (Y.N.U. Excn.); Levisham (W.D.R.).

S. CRUNOBIA Kolenati

straminea Meig.—Sleights, 29/9/37 (H.B.).

S. TRICYPHONA Zetterstedt

immaculata (Meig.)—Widely distributed.

EPIPHRAGMA Osten-Sacken

ocellaris (L.)—Pickering, 4-6/6/38, Wykeham, 6/6/45 (C.A.C.).

AUSTROLIMNOPHILA Alexander

ochracea (Meig.)—Ravenscar, 8/6/24 (P.H.G.); Pickering, 4-6/6/38., Wykeham, 6/6/45 (C.A.C.).

LIMNOPHILA Macquart**S. PHYLIDOREA** Bigot

meigeni Verr.—Hackness, 11/7/36 (C.A.C.).

phaeostigma (Schumm.)—Ravenscar, 8/6/24 (P.H.G.).

ferruginea (Meig.)—Fylinghall, 1928 (W.J.F.).

S. ELAEOPHILA Rondani

mundata (Loew, H.)—Fylinghall, 1928 (W.J.F.).

submarmorata (Verr.)—Fylinghall, 1928 (W.J.F.).

S. LIMNOPHILA s. s.

pictipennis (Meig.)—Levisham, 13/5/95 (W.D.R.).

S. PILARIA Sintenis

nemoralis (Meig.)—Wykeham, 6/6/45 (C.A.C.).

CRYPTERIA Bergroth

limnophiloides Bergr.—Goathland, 4/9/37 (H.B.).

LIPSOTHRIX Loew, H.

remota (Walk.)—Pickering, 4-6/6/38 (C.A.C.).

CHEILOTRICHIA Rossi**S. GONEMPEDA** Alexander

flava (Schumm.)—Sleights, 29/9/37 (H.B.).

S. PLATYTOMA Lioy

cinerascens (Meig.) (= *Empeda nubila* Schumm.)—Pickering, 4-6/6/38 (C.A.C.).

ERIOPTERA Meigen

lutea Meig., var *taenionotata* Meig.—Pickering, 4-6/6/38 (C.A.C.).

fuscipennis Meig.—Robin Hood's Bay, 1927 (W.J.F.).

trivialis Meig.—Ravenscar, 8/6/24 (P.H.G.).

ORMOSIA Rondani**S. ORMOSIA** s. s.

lineata (Macq.)—Ravenscar (Y.N.U. Excn., 1924).

nodulosa (Macq.)—Ravenscar (Y.N.U. Excn., 1924).

S. RHYPHOLOPHUS Kolenati

varia (Meig.)—Goathland, 4/9/37 (F.W.E.); Helwath Beck, 26/9/37 (H.B.).

haemorrhoidalis (Zett.)—Fylinghall, 1928 (W.J.F.); Hole of Horcum, 31/8/37 (H.B.).

MOLOPHILUS Curtis

griseus (Meig.)—Helwath Beck, 26/9/37 (H.B.).

serpentiger Edw., F. W.—Wykeham, 6/6/45 (C.A.C.).

appendiculatus (Staeg.)—Wykeham, 6/6/45 (C.A.C.).

TRICHO CERIDAE — WINTER-GNATS

TRICHO CERA Meigen

- regelationis* (L.)—Very common.
hiemalis (De G.)—Very common.

ANISOPODIDAE

ANISOPUS Meigen

- fenestralis* (Scop.)—Widely distributed.
punctatus (Fabr.)—Fylinghall (W.J.F.); Scarborough (V.C.H.).

PTYCHOPTERIDAE

PTYCHOPTERA Meigen

- albimana* (Fabr.)—Fylinghall, 20/6/24, Robin Hood's Bay, 1927 (W.J.F.).
scutellaris (Meig.)—Ravenscar, 8/6/24 (P.H.G.).
paludosa (Meig.)—Fylinghall, 24/6/29 (W.J.F.); Wykeham, 6/6/45 (C.A.C.).
lacustris (Meig.)—Forge Valley, 3/8/22, Fylinghall, 1928 (W.J.F.).

PSYCHODIDAE

PERICOMA Haliday

- nubila* (Meig.)—Ravenscar, 8/6/24 (P.H.G.).

CULICIDAE—GNATS, MOSQUITOES

DIXA Meigen

- nebulosa* Meig.—Goathland, 30/9/37 (H.B.).
puberula Loew, H.—Sleights, 29/9/37 (H.B.).
submaculata Edw., F. W.—Sleights, 29/9/37 (H.B.).

ANOPHELES Meigen — MOSQUITOES

- claviger* (Meig.)—Muston (Brit. Mus. Handbook).
maculipennis Meig.—Flamborough, Filey, Cayton, Scarborough, Harwood Dale (Brit. Mus. Handbook); Filey, 1927 (W.J.F.).

THEOBALDIA Neveu-Lemaire

- annulata* (Schränk.)—Filey, 8/22 (W.J.F.).

CULEX Linnaeus — GNATS

- pipiens* L.—Very common.

CHIRONOMIDAE

HYDROBAENUS Fries

S. LIMNOPHYTES Eaton

- minimus* (Meig.)—Robin Hood's Bay, (W.J.F.).

CHIRONOMUS Meigen

- plumosus* (L.) var. *ferrugineovittatus* Zett.—PLUMED GNAT.
 Fylinghall, 1929 (W.J.F.); Scarborough (G.B.W.).
dorsalis Meig.—Robin Hood's Bay, 8/6/24 (P.H.G.).

CERATOPOGONIDAE — MIDGES

FORCIPOMYIA Meigen

- nigra* (Winn.)—Scarborough (H.J.B., Ann. Bot., 1895).

CULICOIDES Latreille

- obsoletus* (Meig.)—Common.

SIMULIIDAE

SIMULIUM Latreille

reptans (L.)—Pickering, 4-6/6/38 (C.A.C.).

BIBIONIDAE

BIBIO Geoffroy

leucopterus (Meig.)—Robin Hood's Bay, 3/6/24, Fylinghall, 8/6/24 (W.J.F.); Scarborough, 6/27 (G.B.W.).

pomona (Fabr.)—Common.

marci (L.)—ST. MARK'S FLY. Common, 'bred from old stack refuse (G.B.W.).

lepidus Loew, H.—Scarborough (H.J.B.).

laniger Meig.—Ants' nest, Robin Hood's Bay, 1933 (Y.N.U. Excn.); Saltergate Moor, 12/5/95 (W.D.R.).

DILOPHUS Meigen

febrilis (L.)—In enormous swarms, Scarborough, 22/5/39 (G.B.W.).

femoratus (Meig.)—Robin Hood's Bay, 3/6/24 (W.J.F.).

bispinosus (Lundstr.)—Scarborough, 1897 (H.J.B.).

SCATOPSIDAE

SWAMMERDAMELLA Enderlein

brevicornis (Meig.)—Scarborough, 1895 (H.J.B.).

SCATOPSE Geoffroy

notata (L.)—Scarborough, 1897 (H.J.B.); Goathland, 8/9/20 (W.J.F.); Sleights, 29/9/37 (H.B.).

flavicollis Meig.—Staintondale, 13/9/27 (W.J.F.); Goathland, 30/9/37, Sleights, 29/9/37 (H.B.).

MYCETOPHILIDAE — FUNGUS GNATS

BOLITOPHILA Meigen

occlusa Edw., F. W.—Wykeham, 6/6/45 (C.A.C.).

hybrida (Meig.)—Sleights, 29/9/37 (H.B.).

cinerea Meig.—Helwath Beck, 26/9/37 (H.B.).

MACROCERA Meigen

stigma Curt.—Robin Hood's Bay, 20/6/24 (W.J.F.).

MYCOMYIA Rondani

cinerascens (Macq.)—Wykeham, 6/6/45 (C.A.C.).

tenuis (Walk.)—Sleights, 29/9/37 (H.B.).

NEURATELIA Rondani

memoralis (Meig.)—Beckhole, 1/6/36 (H.B.); Pickering, 4-6/6/38 (C.A.C.).

MONOCLONA Mik

rufilatera (Walk.)—Pickering, 4-6/6/38 (C.A.C.).

BOLETINA Staeger

trivittata (Meig.)—Widely distributed.

plana Walk.—Beckhole, 1/6/36 (H.B.).

basalis (Meig.)—With the last.

EXECHIA Winnertz

subulata Winn.—Goathland, 4/9/37 (F.W.E.).

RHYMOSIA Winnertz*cristata* (Staeg.)—Pickering, 4-6/6/38 (C.A.C.).*fenestralis* (Meig.)—Beckhole, 18/7/36 (H.B.).**ALLODIA** Winnertz*ornaticollis* (Meig.)—Robin Hood's Bay, 1927 (W.J.F.).*sericoma* (Meig.)—Helwath Beck, 26/9/37 (H.B.).**CORDYLA** Meigen*crassicornis* Meig.—Sleights, 29/9/37 (H.B.).*pusilla* Edw., F. W.—Sleights, 29/9/37 (H.B.).**PHRONIA** Winnertz*annulata* Winn.—Helwath Beck, 26/9/37 (H.B.).*cinerascens* Winn.—Beckhole, 1/6/36 (H.B.).**MYCETOPHILA** Meigen*lineola* Meig.—Sleights, 1/6/36, Helwath Beck, 26/9/37 (H.B.).*vittipes* Zett.—Wykeham, 6/6/45 (C.A.C.).*finlandica* Edw., F. W.—Beckhole, 1/6/36 (H.B.).*signatoides* Dziedz.—Helwath Beck, 26/9/37 (H.B.).*obscura* Dziedz.—Pickering, 4-6/6/38 (C.A.C.).**SCIARA** Meigen**S. SCIARA** s. s.*trochanterata* Zett.—Pickering, 4-6/6/38, Wykeham, 6/6/45 (C.A.C.).**S. PSILOMEGALOSPHEYS** Enderlein*flavipes* Meig.—Forge Valley, 3/8/22 (W.J.F.).**S. BRADYSIA** Winnertz*carbonaria* Meig.—In myriads, Scarborough and along the coast, 22/5/39 (G.B.W.).

CECIDOMYIIDAE — GALL-GNATS

LASIOPTERA Meigen*rubri* Heeg.—Scarborough (R.S.B. & J.W.H.H.); Forge Valley (G.B.W.).**RHABDOPHAGA** Westwood*albipennis* (Loew, H.)—Very common on *Salix* spp.*heterobia* (Loew, H.)—On *Salix cinerea*, Jagger Howe Dale, 1921 (H.J.B.).*marginemtorquens* (Winn.)—Very common on *Salix* spp.*nervorum* (Kieff.)—Common on *Salix* spp.*rosaria* (Loew, H.)—Common on *Salix* spp.*rosariella* Kieff.—Harwood-dale, Biller Howe Dale, 1921 (H.J.B.).*salicis* (Schr.)—Common.*terminalis* (Loew, H.)—Abundant.**DASYNEURA** Rondani*acrophila* (Winn.)—On *Fraxinus*. Generally distributed.*cirsii* (Ruebs.)—Common and generally distributed.*crataegi* (Winn.)—Abundant.*filicina* (Kieff.)—Common and generally distributed.*fraxinea* (Kieff.)—Somewhat uncommon on *Fraxinus*.*fraxini* (Kieff.)—With the last.

fructuum (Ruebs.)—Common.

galiicola (Loew, F.)—Common on *Galium verum*.

hygrophila (Mik)—Jugger Howe Dale on *Galium palustre* (H.J.B.).

kiefferiana (Ruebs.)—Scarborough on *Chamaenerion angustifolium* (J.M.B.).

lathyri (Kieff.)—On *Lathyrus pratensis*, common.

lathyricola (Ruebs.)—Ravenscar, Cayton Bay (J.M.B.).

plicatrix (Loew, H.)—On *Rubus*, Raincliffe Wood and Robin Hood's Bay (W.F.).

pustulans (Ruebs.)—Common on *Filipendula ulmaria*.

ranunculi (Bremi-Wolf)—Fairly common.

serotina (Winn.)—Near Falcon Inn, on *Hypericum humifusum* (H.J.B.).

tortrix (Loew, F.)—Scarborough, common on wild *Prunus domestica* (W.F.).

tubicola (Kieff.)—On *Sarothamnus scoparius* on Hardhurst Moor (H.J.B.).

ulmariae (Bremi-Wolf)—Common.

urticae (Perr.)—Very common.

viciae (Kieff.)—On *Vicia cracca*, common.

JAAPIELLA Ruebsaamen

cirsiicola (Ruebs.)—Widely distributed.

loticola (Ruebs.)—Not uncommon on *Lotus* spp.

veronicae (Vall.)—Very common.

volvens Ruebs.—Not uncommon.

LATHROMYZA Ruebsaamen

schlechtendali (Kieff.)—Scarborough, Ravenscar on *Lathyrus montanus* (H.J.B.).

GEOCRYPTA Kieffer

galii (Loew, H.)—Common.

WACHTLIELLA Ruebsaamen

persicariae (L.)—Common.

rosarum (Hardy)—Fairly common.

MACROLABIS Kieffer

corrugans (Loew, H.)—On *Heracleum sphondylium*. Widely distributed.

MIKIOLA Kieffer

fagi (Hart., T.)—Danes Dyke (W.F.); Hayburn Wyke (G.B.W.); uncommon.

PEMPHIGOCECIS Ruebsaamen

ventricola (Ruebs.)—Fairly common on *Molinia caerulea* (L.) on the moors.

HARTIGIOLA Ruebsaamen

annulipes (Hart., T.)—On *Fagus*, widely distributed.

RONDANIOLA Ruebsaamen & Hedicke

bursaria (Bremi-Wolf)—On *Nepeta*, Scarborough (G.B.W.); Ravenscar (H.J.B.).

MIKOMYIA Kieffer

coryli (Kieff.)—Raincliffe Wood (G.B.W. and J.M.G.).

RHOPALOMYIA Ruebsaamen*millefolii* (Loew, H.)—Common, but overlooked.**ASPHONDYLIA** Loew, H.*mayeri* Lieb.—On *Sarothamnus*, Hardhurst Moor (H.J.B.).*ulicis* Verr.—Very common.**CONTARINIA** Rondani*acerplicans* (Kieff.)—Robin Hood's Bay (H.J.B.).*anthobia* Loew, F.—Well distributed.*barbichei* (Kieff.)—Common on *Lotus corniculatus*.*betulina* (Kieff.)—Beast Cliff (H.J.B.).*craccae* Kieff.—Common.*floriperda* Ruebs.—Common on flowers of *Sorbus aucuparia* (R.S.B. and J.W.H.H.).*loti* De G.—Cornelian Bay (H.J.B.).*steinii* (Karsch.)—Widely distributed.*tiliarum* (Kieff.)—Scarborough, uncommon (J.M.G. and G.B.W.).**MACRODIPLOSIS** Kieffer*dryobia* (Loew, H.)—Bloody Beck (W.J.F.); Scarborough (J.M.B.).**PUTONIELLA** Kieffer*marsupialis* (Loew, F.)—Helwath Beck, 4/7/27 (H.B.).**BRACHYCERA****STRATIOMYIDAE****BERIS** Latreille*vallata* (Forst.)—Fairly common.*geniculata* Curt.—Fylinghall, 29/6/29, Forge Valley, 3/8/22 (W.J.F.); Gristhorpe Bay, 3/7/48 (C.A.C.).*morrisii* Dale, J. C.—Scarborough Mere, 11/6/43 (C.A.C.).**MICROCHRYSA** Loew, H.*polita* (L.)—Fylinghall, 26/9/29, 18/6/31 (W.J.F.).*cyaneiventris* (Zett.)—Robin Hood's Bay, 12/6/24 (W.J.F.).**GEOSARGUS** Bezzi*cuprarius* (L.)—Robin Hood's Bay, 2/9/27 (W.J.F.).*iridatus* (Scop.)—Fylinghall, 1928 (W.J.F.).**CHLOROMYIA** Duncan*formosa* (Scop.)—Fylinghall, 1928 (W.J.F.); Scarborough (G.E.F. and C.A.C.).**ODONTOMYIA** Meigen*viridula* (Fabr.)—Fen Bog, Goathland, 11/7/37 (H.B.).**OXYCERA** Meigen*dives* Loew, H.—Hole of Horcum, 5/7/37 (H.B.).**RHAGIONIDAE****XYLOPHAGUS** Meigen*ater* Meig.—Raincliffe Wood (G.B.W.); Wykeham, 6/6/45 (C.A.C.).**ATHERIX** Meigen*ibis* (Fabr.)—Helwath Beck, 14/7/35 (H.B.); Bempton, 6/49 (A.J.W.).

RHAGIO Fabricius

scolopacea (L.)—Robin Hood's Bay, 22/6/24, Fylinghall, 18/6/31 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).

notata (Meig.)—Fylinghall, 1928 (W.J.F.); Wykeham, 6/6/45 (C.A.C.).

tringaria (L.)—Forge Valley, 3/8/22; Filey, 8/22 (W.J.F.).

var. *nigriventris* (Loew, H.)—With the type.

lineola Fabr.—Staintondale, 13/9/27; Fylinghall, 29/6/29 (W.J.F.).

CHRYSOPILUS Macquart

cristatus (Fabr.)—Widely distributed.

aureus (Meig.)—Fylinghall, 1928 (W.J.F.); Fen Bog, 11/7/37 (H.B.).

SYMPHOROMYIA Frauenfeld

immaculata (Meig.)—Filey, 8/22 (W.J.F.).

TABANIDAE

CHRYSOPS Meigen

caecutiens (L.)—Seamer Moor, Forge Valley (G.B.W.).

HAEMATOPOTA Meigen

pluvialis (L.)—CLEG.—Very common, especially in damp places.

TABANUS Linnaeus—BREEZE-FLIES OR GAD-FLIES.

sudeticus Zell.—Hole of Horcum, 4/7/37 (H.B.).

bromius L.—Raincliffe Wood (G.B.W.).

BOMBYLIIDAE — BEE-FLIES

BOMBYLIUS Linnaeus

major L.—Fairly common in the spring.

THEREVIDAE

THEREVA Latreille

nobilitata (Fabr.)—Staxton sand-pits, 13/6/43 (C.A.C.).

ASILIDAE — ROBBER-FLIES

ISOPOGON Loew, H.

brevirostris (Meig.)—Fylinghall, 26/6/29 (W.J.F.).

LASIOPOGON Loew, H.

cinctus (Fabr.)—Staxton sand-pits, 13/6/43 (C.A.C.).

DIOCTRIA Meigen

rufipes (De G.)—Common, Hayburn Wyke, 10/20 (G.B.W.).

ASILUS Linnaeus

crabroniformis L.—Cloughthorpe (G.B.W.).

EMPIDIDAE

HYBOS Meigen

culiciformis (Fabr.)—Staintondale, 1920, Forge Valley, 3/8/22 (W.J.F.).

TRICHINA Meigen

clavipes Meig.—Helwath Beck, 26/9/37 (H.B.).

OCYDROMIA Meigen

glabricula (Fall.)—Goathland, 30/9/37 (H.B.).

HILARA Meigen*intermedia* (Fall.)—Pickering, 4-6/6/38 (C.A.C.).*flavipes* Meig.—Hole of Horcum, in flowers of *Cornus*, 29/5/37 (H.B.).*maura* (Fabr.)—Robin Hood's Bay, 8/6/24, Hayburn Wyke, 17/6/24 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).*curtisi* Coll.—Pickering, 4-6/6/38 (C.A.C.).**EMPIS** Linnaeus**S. XANTHEMPIS** Bezzi*stercorea* L.—Robin Hood's Bay, 23/6/24 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).*trigramma* Meig.—Widely distributed.**S. KRITEMPIS** Collin*livida* L.—Fylinghall, 1928 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).**S. LEPTEMPIS** Collin*grisea* Fall.—Fylinghall, 1928 (W.J.F.).**S. PACHYMERIA** Stephens*tessellata* Fabr.—Widely distributed.**S. EMPIS** s. s.*pennaria* Fall.—Forge Valley, 3/8/22 (W.J.F.); Pickering (C.A.C.).*rufiventris* Meig.—Pickering, 4-6/6/38 (C.A.C.).**RHAMPHOMYIA** Meigen**S. LUNDSTROEMIELLA** Frey, R.*hybotina* Zett.—Ravenscar, 8/6/24 (P.H.G.).**S. HOLOCLERA** Schiner*flava* (Fall.)—Ravenscar, 8/6/24 (P.H.G.); Pickering, 4-6/6/38 (C.A.C.).**S. MEGACYTTARUS** Bigot*nigripes* (Fabr.)—Ravenscar, 8/6/24 (P.H.G.).[**S. PARARHAMPHOMYIA** Frey, R.*dentipes* Zett.—Occurs just outside our area at Egton Bridge.]**S. DASYRHAMPHOMYIA** Frey, R.*plumipes* (Meig.)—Very rare; Fylinghall, 1928 (W.J.F.).**S. AMYDRONEURA** Collin*hirsutipes* Coll.—Hole of Horcum, 31/8/37 (H.B.).**S. ACLONEMPIS** Collin*albohirta* Coll.—Wykeham, 6/6/45 (C.A.C.).**S. RHAMPHOMYIA** s. s.*spinipes* (Fall.)—Hole of Horcum, 31/8/37 (F.W.E.).*sulcata* (Meig.)—Robin Hood's Bay, 30/5/24 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).*albosegmentata* (Zett.)—Ravenscar, 8/6/24 (P.H.G.); Levisham (W.D.R.).**CHELIFERA** Macquart*concinicauda* Coll.—Ravenscar, 8/6/24 (P.H.G.).**DOLICHOPODIDAE****DOLICHOPUS** Latreille

- S. LEUCODOLICHOPUS** Frey, R.
atripes Meig.—Fylinghall, 1928 (W.J.F.).
- S. EUDOLICHOPUS** Frey, R.
discifer Stann.—Fylinghall, 18/6/31 (W.J.F.).
plumipes (Scop.)—Fylinghall, 1928 (W.J.F.).
pennatus Meig.—Fylinghall, 1928 (W.J.F.).
popularis Wied.—Fylinghall, 18/6/31 (W.J.F.).
- S. DOLICHOPUS** s. s.
brevipennis Meig.—Fylinghall, 20/6/24 (W.J.F.).
ungulatus (L.)—Widely distributed.
- HERCOSTOMUS** Loew, H.
nigripennis (Fall.)—Pickering, 4-6/6/38 (C.A.C.).
- HYDROPHORUS** Fallén
nebulosus (Fall.)—Goathland, 30/9/37 (H.B.); Seamer Moor, 1922 (W.J.F.).
- SCELLUS** Loew, H.
notatus (Fabr.)—Robin Hood's Bay, 23/6/24 (W.J.F.).
- LIANCALUS** Loew, H.
virens (Scop.)—Hayburn Wyke, 4/9/20, Ramsdale, 7/9/20 (W.J.F.).
- SCHOENOPHILUS** Mik
versutus (Walk.)—Plentiful on the cliffs, Gristhorpe Bay, 3/7/48 (C.A.C.).
- NEUROGONA** (Rondani) Oldenberg
quadrifasciata (Fabr.)—Wykeham, 6/6/45 (C.A.C.).
- ARGYRA** Macquart
diaphana (Fabr.)—Robin Hood's Bay, 19/6/24, Fylinghall, 1928 (W.J.F.).
argentina (Meig.)—Robin Hood's Bay, 1927 (W.J.F.).
argyria (Meig.)—Fylinghall, 23/6/24 (W.J.F.).
leucocephala (Meig.)—Fylinghall, 18/6/31 (W.J.F.).
- CAMPSICNEMUS** Walker
scambus (Fall.)—Goathland, 30/9/37, Sleights, 2/10/37 (H.B.).
curvipes (Fall.)—With the last.
loripes (Hal.)—Helwath Beck, 26/9/37 (H.B.).
- SYMPYCNUS** Loew, H.
annulipes (Meig.)—Pickering, 4-6/6/38 (C.A.C.).

PHORIDAE

- PHORA** Latreille
aterrima (Fabr.)—Ravenscar, 1/9/20, Staintondale (W.J.F.).

CYCLORRHAPHA

DORILAIIDAE

- CHALARUS** Walker
spurius (Fall.)—Pickering, 4-6/6/38 (C.A.C.).
- DORILAS** Meigen
terminalis (Thoms., C. G.)—Pickering, 4-6/6/38 (C.A.C.).
flavipes (Meig.)—With the last.

SYRPHIDAE — HOVER-FLIES

LAMPETIA Meigen

equestris (Fabr.)—BULB FLY—Occasional (H.W.T.).

MYATHROPA Rondani

florea (L.)—Hackness, 11/7/36 (C.A.C.).

TUBIFERA Meigen

tenax (L.)—DRONE FLY.—Very common, especially round Michaelmas daisies in September.

arbustorum (L.)—Fairly common.

rupium (Fabr.)—Widely distributed.

horticola (De G.)—Widely distributed.

pertinax (Scop.)—Common.

ANASIMYIA Schiner

lineata (Fabr.)—Raincliffe Wood (G.B.W.).

HELOPHILUS Fabricius

hybridus (Loew, H.)—Filey, 8/22 (W.J.F.).

pendulus (L.)—Robin Hood's Bay, 13/6/24 (W.J.F.); Scarborough, 1895 (H.J.B.).

FERDINANDEA Rondani

cuprea (Scop.)—Robin Hood's Bay, 25/6/24 (W.J.F.).

ZELIMA Meigen

segnis (L.)—Common and widely distributed.

lenta (Meig.)—Fylinghall, 1928 (W.J.F.).

sylvarum (L.)—Fylinghall, 1/7/29 (W.J.F.).

PENTHESILEA Meigen

berberina (Fabr.)—Fylinghall, 18/6/31 (W.J.F.).

floccosa (Meig.)—Fylinghall, 26/6/29 (W.J.F.).

ARCTOPHILA Schiner

fulva (Harr., M.)—Scarborough (H.J.B.).

CINXIA Meigen

silentis (Harr., M.)—Widely distributed.

lappona (L.)—Fylinghall, 26/6/29 (W.J.F.).

TROPIDIA Meigen

scita (Harr., M.)—Not uncommon, Scarborough Mere, 12/6/43 (C.A.C.).

SYRITTA Lepeletier & Serville

pipiens (L.)—Common.

RHINGIA Scopoli

macrocephala (Harr., M.)—Common.

VOLUCELLA Geoffroy

pellucens (L.)—Common; bred from larvae in nest of *Vespula vulgaris* in Forge Valley, 1920 (G.B.W.).

bombylans (L.)—Fairly common.

PELECOCERA Rondani

tricincta Meig.—Seamer Moor, 1922 (W.J.F.).

NEOASCIA Williston

dispar (Meig.)—Fylinghall, 26/6/29 (W.J.F.).

SPHEGINA Meigen

clunipes (Fall.)—Fylinghall, 20/6/24 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).

BACCHA Fabricius

elongata (Fabr.)—Widely distributed from May to September.

CHILOMYIA Shannon

illustrata (Harr., M.)—Common.

variabilis (Panz.)—Fylinghall, 18/6/31 (W.J.F.); Pickering, 4-6/6/38 (C.A.C.).

honesta (Rond.)—Fylinghall, 1928 (W.J.F.).

chrysocoma (Meig.)—Pickering, 4-6/6/38 (C.A.C.).

nebulosa (Verr.)—Scarborough, 1897 (H.J.B.).

albitarsis (Egg.)—Widely distributed.

PORTEVINIA Goffe

maculata (Fall.)—Pickering, 4-6/6/38 (C.A.C.).

CARTOSYRPHUS Bigot

nasatulus (Beck.)—Fylinghall (W.J.F.).

nigripes (Meig.)—(As *Chilosia antiqua* Meig.)—Robin Hood's Bay, 1924; Fylinghall, 1928 (W.J.F.).

paganus (Meig.)—Pickering, 4-6/6/38 (C.A.C.).

ORTHONEURA Macquart

splendens (Meig.)—Filey, 8/22 (W.J.F.).

CHRYSOGASTER Meigen

hirtella Loew, H.—Scarborough Mere, 11/6/43 (C.A.C.).

macquarti Loew, H.—Fylinghall, 18/6/31 (W.J.F.).

virescens Loew, H.—Fylinghall, 1928 (W.J.F.).

solstitialis (Fall.)—Widely distributed.

SULCATELLA Goffe

tarsata (Meig.)—Hackness, 11/7/36 (C.A.C.).

metallina (Fabr.)—Scarborough (W.D.R.); Fylinghall, 1928 (W.J.F.).

CHEILOSIA Panzer

granditarsa (Forst.)—Filey, 8/22 (W.J.F.).

MELANOSTOMA Schiner

mellinum (L.)—Levisham (W.D.R.); Fylinghall, 18/6/31 (W.J.F.).

scalare (Fabr.)—Common.

PLATYCHEIRUS Lepeletier & Serville

manicatus (Meig.)—Common.

peltatus (Meig.)—Fylinghall, 18/6/31 (W.J.F.); Wykeham, 6/6/45 (C.A.C.).

scutatus (Meig.)—Common.

albimanus (Fabr.)—Widely distributed.

scambus (Staeg.)—Fylinghall, 1928 (W.J.F.).

fulviventris (Macq.)—Scarborough Mere, 11/6/43 (C.A.C.).

clypeatus (Meig.)—Filey, 8/22 (W.J.F.).

angustatus (Zett.)—Robin Hood's Bay, 12/6/24, Fylinghall, 1/7/29 (W.J.F.).

PARAGUS Latreille*tibialis* (Fall.)—Staxton, 13/6/43 (C.A.C.).**MELANGYNA** Verrall*quadrinaculata* (Verr.)—Scarborough, 1897 (H.J.B.).**STENOSYRPHUS** Matsumura*barbifrons* (Fall.)—Scarborough, 1895 (H.J.B.).*compositarum* (Verr.)—Scarborough Mere, 12/6/43 (C.A.C.).*lasiophthalmus* (Zett.)—Widely distributed.**SPHAEROPHORIA** Lepeletier & Serville*scripta* (L.)—Scarborough, 1895 (H.J.B.).*menthastri* (L.)—Filey, 8/22, Fylinghall, 1928 (W.J.F.).**EPISYRPHUS** Matsumura*auricollis* (Meig.)—Staintondale, 14/9/20, Forge Valley, 3/8/22 (W.J.F.).var. *maculicornis* (Zett.)—Forge Valley, 3/8/22, Robin Hood's Bay, 1924, Fylinghall, 1928 (W.J.F.).*cinctus* (Fall.)—Scarborough (E.C.H.).*cinctellus* (Zett.)—Forge Valley, 3/8/22 (W.J.F.).*balteatus* (De G.)—Scarborough, 1895 (H.J.B.).**ISCHYROSYPHUS** Bigot*glaucius* (L.)—Ramsdale, 3/9/27 (W.J.F.).*latermarius* (Muell., O. F.)—Robin Hood's Bay, 6/9/27 (W.J.F.).**EPISTROPHE** Walker*eligans* (Harr., M.)—Levisham (W.D.R.); Fylinghall, 18/6/31 (W.J.F.).**PIPIZA** Fallén*noctiluca* (L.)—Fylinghall, 1928 (W.J.F.).*austriaca* Meig.—Fylinghall, 1928 (W.J.F.).**PHALANGUS** Meigen*heringi* (Zett.)—Scarborough, 11/6/43 (C.A.C.).**CHRYOTOSUM** Meigen*arcuatum* (L.)—Common.**ZANTHOGRAMMA** Schiner*citrofasciatum* (De G.)—Pickering, 4-6/6/38 (C.A.C.).**SCAEVA** Fabricius*pyrastri* (L.)—Common.**METASYRPHUS** Matsumura*latifasciatus* (Macq.)—Fylinghall, 28/6/29 (W.J.F.).*corollae* (Fabr.) [= *consisto* (Harr., M.)]—Scarborough, 1895 (H.J.B.); Fylinghall, 1928 (W.J.F.).*luniger* (Meig.)—Filey, 8/22; Fylinghall, 7/9/20 (W.J.F.).**SYRPHELLA** Goffe*albostrigata* (Fall.)—Fylinghall, 1928 (W.J.F.).*venusta* (Meig.)—Widely distributed.*lunulata* (Meig.)—Fylinghall, 29/6/29 (W.J.F.).**SYRPHIDIS** Goffe*torvus* (Ost. Sack.)—Forge Valley, 3/8/22 (W.J.F.).*ribesii* (L.)—Common.*vitripennis* (Meig.)—Fylinghall, 18/6/31 (W.J.F.).

SCHIZOPHORA

CONOPIDAE

CONOPS Linnaeus

flavipes L.—Hackness, 11/7/36 (C.A.C.).

PHYSOCEPHALA Schiner

nigra (De G.)—Hutton Buscel (E.G.B.).

ZODION Latreille

cinereum (Fabr.)—Fylinghall, 1928 (W.J.F.).

SICUS Scopoli

ferrugineus (L.)—Helwath Beck, 11/7/35 (H.B.).

PLATYSTOMATIDAE

PLATYSTOMA Meigen

seminationis (L.)—Raincliffe Wood, 11/6/43 (W.D.H.).

OTITIDAE

HERINA Robineau - Desvoidy

germinationis (Rossi)—Fylinghall, 29/6/29 (W.J.F.).

SEIOPTERA Kirby, W.

vibrans (L.)—Pickering, 4-6/6/38 (C.A.C.).

PALLOPTERIDAE

PALLOPTERA Fallén

saltuum (L.)—Forge Valley, 3/8/22 (W.J.F.).

arcuata (Fabr.)—Pickering, 4-6/6/38 (C.A.C.).

PIOPHILIDAE

PIOPHILA Fallén

casei (L.)—Occasional. Scarborough, damaging bacon in store (G.B.W.).

DRYOMYZIDAE

DRYOMYZA Fallén

senilis Zett.—Forge Valley, 3/8/22 (W.J.F.).

NEUROCTENA Rondani

anilis (Fall.)—Fylinghall, 1928 (W.J.F.); Sleights, 2/10/37 (H.B.); in carrion traps in the winter, Raincliffe Wood (G.B.W.).

HELCOMYZA Curtis

ustulata Curt.—Scarborough (H.J.B.); Forge Valley, 3/8/22 (W.J.F.).

TRYPETIDAE

UROPHORA Robineau - Desvoidy

jaceana (Her.)—Common in galls in flower-heads of *Centaurea nigra* L.

EURIBIA Meigen

zoë (Meig.)—Common.

PRIONIMERA Rondani

cognata (Wied.)—Common.

PHILOPHYLLA Rondani

heraclei (L.)—Larvae in leaves of *Heracleum sphondylium* L., and at times a pest on parsnip and celery; very common.

TRYPETA Meigen**S. CHAETOSTOMELLA** Hendel*cylindrica* (Rob.-Desv.)—Common.**XYPHOSIA** Robineau-Desvoidy*miliaria* (Schränk)—Common.**ENSINA** Robineau-Desvoidy*sonchi* (L.)—Scarborough, 1895 (H.J.B.).**TEPHRITIS** Latreille*conjuncta* (Loew, H.)—Ramsdale, 1928 (W.J.F.).*vespertina* (Loew, H.)—Widely distributed.*leontodontis* (De G.)—Fylinghall, 6/28 (W.J.F.).**NOEETA** Robineau-Desvoidy*pupillata* (Fall.)—Widely distributed.

LONCHAEIDAE

LONCHAEA Fallén*chorea* (Fabr.)—Widely distributed.

LAUXANIIDAE

PRORAPHOCHAETA Czerny*inusta* (Meig.)—Ravenscar, 8/6/24 (P.H.G.).**CNEMACANTHA** Macquart*rorida* (Fall.)—Helwath Beck, 26/9/37 (H.B.).*pallidiventris* (Fall.)—With the last.*sordida* (Hal.)—Raincliffe Wood (G.B.W.).*decempunctata* (Fall.)—Ravenscar, 1924 (C.A.C.).

TYLIDAE

TREPIDARIA Meigen**S. CNODACOPHORA** Czerny*adusta* (Loew, H.)—Fylinghall, 1928 (W.J.F.).**S. TREPIDARIA** s. s.*petronella* (L.)—Fylinghall, 28/6/29 (W.J.F.).**TYLOS** Meigen*corrigiolatus* (L.)—Widely distributed.

PSILIDAE

CHYLIZA Fallén*annulipes* Macq.—Pickering, 4-6/6/38 (C.A.C.).**LOXOCERA** Meigen*aristata* (Panz.)—Fylinghall, 1928 (W.J.F.).**PSILA** Meigen**S. PELETHOPHILA** Hagenbach*finetaria* (L.)—Widely distributed.**S. PSILA** s. s.*rosae* (Fabr.)—CARROT FLY. Abundant; at times doing serious damage to carrot crops.*nigricornis* Meig.—Robin Hood's Bay, 1927 (W.J.F.).*nigra* (Fall.)—Robin Hood's Bay, 20/6/24 (W.J.F.).

SEPSIDAE

THEMIRA Robineau-Desvoidy

lucida (Staeg.)—Fylinghall, 1928 (W.J.F.).

NEMOPODA Robineau-Desvoidy

nitidula (Fall.)—Robin Hood's Bay, 1927 (W.J.F.).

SEPSIS Fallén

fulgens Meig.—Scarborough, 1897 (H.J.B.).

violacea Meig.—Fylinghall, 1928 (W.J.F.).

cynipsea (L.)—Scarborough, 1895 (H.J.B.); Seamer Moor, 1922 (W.J.F.).

SCIOMYZIDAE

PHAEMYIA Schiner

fuscipennis (Meig.)—Fylinghall, 26/6/39 (W.J.F.).

SCIOMYZA Fallén

dubia Fall.—Widely distributed.

scutellaris von Ros.—Robin Hood's Bay, 1927; Fylinghall, 1933 (W.J.F.).

DITAENIA Hendel

cinerella Fall.—Pickering, 4-6/6/38 (C.A.C.).

RENOCERA Hendel

pallida Fall.—Fylinghall, 1928 (W.J.F.).

TETANOCERA Duméril

hyalipennis von Ros.—Fylinghall, 1928 (W.J.F.).

silvatica Meig.—Fylinghall, 18/6/31 (W.J.F.).

unicolor Loew, H.—Fylinghall, 1928 (W.J.F.).

elata (Fabr.)—Pickering, 4-6/6/38 (C.A.C.).

TRYPETOPTERA Hendel

punctulata (Scop.)—Widely distributed.

ILIONE Haliday in Westwood

albisetia (Scop.)—Raincliffe Wood (G.B.W.).

HYDROMYA Robineau-Desvoidy

dorsalis (Fabr.)—Fylinghall, 26/6/29 (W.J.F.).

LIMNIA Robineau-Desvoidy

unguicornis (Scop.)—Forge Valley, 3/8/22 (W.J.F.).

CHAMAEMYIIDAE

CHAMAEMYIA Meigen

geniculata (Zett.)—Robin Hood's Bay, 8/6/24 (Y.N.U. Excn.).

COELOPIDAE

COELOPA Meigen

pilipes Hal.—On the coast under seaweed (C.A.C.).

frigida (Fabr.)—Gristhorpe Bay, 3/7/48 (C.A.C.).

HELOMYZIDAE

HELOMYZA Fallén

[*notata* Meig.] var. *hilaris* Zett.—Fylinghall, 29/6/29 (W.J.F.).

affinis Meig.—Fylinghall, (W.J.F.).

flava Meig.—Forge Valley, 3/8/22 (W.J.F.).

similis Meig.—With the last.

pallida Fall.—Pickering, 4-6/6/38 (C.A.C.).

ustulata Meig.—Forge Valley, 3/8/22 (W.J.F.).

TEPHROCLAMYS Loew, H.

rufiventris (Meig.)—Scarborough, 1897 (H.J.B.) ; Robin Hood's Bay, 21/6/24 (W.J.F.).

NEOLERIA Malloch

inscripta (Meig.)—In carrion traps in the winter, Raincliffe Wood (G.B.W.).

ECCOPTOMERA Loew, H.

microps (Meig.)—In moles' nests, Brompton, 4/36 (G.B.W.).

CHAETOMUS Czerny

flavotestaceus (Zett.)—Pickering, 4-6/6/38 (C.A.C.).

OPOMYZIDAE

OPOMYZA Fallén

germinationis (L.)—Goathland, 1921 ; Fylinghall, 1928 (W.J.F.).

EPHYRIDAE

NOTIPHILA Fallén

nigricornis Steph.—Flamborough (W.D.R.).

cinerea Fall.—Flamborough (W.D.R.).

HYDROPOTA Rondani

griseola (Fall.)—Widely distributed.

LIMNELLIA Malloch

quadrata (Fall.)—Robin Hood's Bay, 24/6/24 (W.J.F.).

TEICHOMYZA Macquart

fusca Macq.—Flamborough (C.A.C.).

SPHAEROCERIDAE

STRATIOBORBORUS Duda

nitidus (Meig.)—Robin Hood's Bay, 8/6/24 (Y.N.U. Excn.).

THORACOAETA Duda

zosteræ (Hal.)—Robin Hood's Bay, 1933 (Y.N.U. Excn.). Common at Flamborough (C.A.C.).

DIASTATIDAE

DIASTATA Meigen

nebulosa (Fall.)—Hole of Horcum, 1/9/37 (H.B.).

DROSOPHILIDAE

DROSOPHILA Fallén

S. SCAPTOMYZA Hardy

graminum Fall.—Scarborough, 1895 (H.J.B.).

S. DROSOPHILA s. s.

phalerata Meig.—Goathland, 30/6/37 (H.B.).

AGROMYZIDAE

PHYTOMYZA Fallén

ilicis Curt.—Very common.

BRAULIDAE

BRAULA Nitzsch

coeca Nitzsch—BEE "LOUSE". Taken by Mr. Colin Beech in small numbers in 1952 in an apiary near Scarborough and in much larger numbers, on both drones and workers, in 1953. Probably introduced in purchased stock from the South.

CHLOROPIDAE

OSCINELLA Becker

frit (L.)—Very common and harmful (H.W.T.).

MEROMYZA Meigen

pratorum Meig.—Fylinghall, 1/7/29 (W.J.F.).

CHLOROPS Meigen

pumilionis (Bjerk.)—Rare (H.W.T.).

CORDILURIDAE

CORDILURA Fallén

pubera (L.)—Fylinghall, 1928 (W.J.F.).

PARALLELOMMA Becker

dispar (Zett.)—Fylinghall, 1928 (W.J.F.).

SCOPEUMA Meigen

inquinatum (Meig.)—Robin Hood's Bay, 24/6/24 (W.J.F.).

lutarium (Fabr.)—Common.

stercorarium (L.)—DUNG FLY. Common everywhere; in carrion traps in the winter in Raincliffe Wood (G.B.W.).

SCATOMYZA Fallén

litorea Fall.—Grithorpe Bay, 3/7/48 (C.A.C.).

CERATINOSTOMA Meade

ostiorum (Hal. in Curt.)—With the last.

LARVAEVORIDAE

CYZENIS Robineau-Desvoidy

albicans (Fall.)—Fylinghall, 1928 (W.J.F.).

PHRYXE Robineau-Desvoidy

vulgaris (Fall.)—Filey, 8/22 (W.J.F.).

LYDELLA Robineau-Desvoidy

stabulans (Meig.)—Filey, 8/22 (W.J.F.).

CROCUTA Meigen

geniculata (De G.)—Scarborough, 1895 (H.J.B.).

VORIA Robineau-Desvoidy

ruralis (Fall.)—Robin Hood's Bay, 1927; Fylinghall, 22/9/30 (W.J.F.).

WAGNERIA Robineau-Desvoidy

lentis (Meig.)—Robin Hood's Bay, 19/6/24 (W.J.F.).

GYMNOCHETA Robineau-Desvoidy

viridis (Fall.)—Hayburn Wyke, 17/6/24 (W.J.F.).

LINNAEMYA Robineau-Desvoidy

vulpina (Fall.)—Hackness, 11/7/36 (C.A.C.).

ERIOTHRIX Meigen

rufomaculatus (De G.)—With the last.

LARVAEVORA Meigen*grossa* (L.)—Helwath Beck, 14/7/35 (H.B.).**PHYLLOMYA** Robineau-Desvoidy*volvulus* (Fabr.)—Forge Valley, 3/8/22 (W.J.F.).**DEXIOSOMA** Rondani*caninum* (Fabr.)—Pickering, 2/8/41 (C.A.C.).**ALOPHORA** Robineau-Desvoidy*hemiptera* (Fabr.)—Pickering, 2/8/41 (C.A.C.).**OESTRUS** Linnaeus*ovis* L.—SHEEP BOT FLY. Local and occasional (H.W.T.).

CALLIPHORIDAE

SARCOPHAGA Meigen**S. THYRSOCNEMA** Enderlein*incisilobata* Pand.—Filey, 8/22 (W.J.F.).**S. SARCOPHAGA** s. s.*carnaria* (L.)—FLESH FLY. Very common.*subvicina* Rohd.—Filey, 8/22 (W.J.F.).**HYPODERMA** Latreille—OXWARBLE FLY.*lineatum* (de Vill., C. J.)—Common (H.W.T.).*bovis* (L.)—Common (H.W.T.).**CYNOMYA** Robineau-Desvoidy*mortuorum* (L.)—Pickering, 4-6/6/38 (C.A.C.).**CALLIPHORA** Robineau-Desvoidy—BLUEBOTTLE.*erythrocephala* (Meig.)—Very common.*vomitorea* (L.)—Less common than the last.**ONESIA** Robineau-Desvoidy*biseta* Vill. in Kram.—Scarborough, 1895 (H.J.B.); Robin Hood's Bay, 8/6/24 (Y.N.U. Excn.).**LUCILIA** Robineau-Desvoidy*caesar* (L.)—GREENBOTTLE. Common.*illustris* (Meig.)—Scarborough, 1897 (H.J.B.).*silvarum* (Meig.)—Scarborough, 1895 (H.J.B.).*sericata* (Meig.)—SHEEP MAGGOT FLY. Very common (H.W.T.).**POLLENIA** Robineau-Desvoidy*rudis* (Fabr.)—CLUSTER FLY. Very common. Found hibernating in clusters of hundreds under the stone steps in Hackness Church, also in houses.

MUSCIDAE

MUSCA Linnaeus*domestica* L.—HOUSE FLY. Still common, especially in the country, but much reduced in numbers.**ORTHELLIA** Robineau-Desvoidy*cornicina* (Fabr.)—Scarborough, 1895 (H.J.B.); occurred in great numbers in a house in Scarborough at the end of October, 1937 (G.B.W.).**DASYPHORA** Robineau-Desvoidy*cyarella* (Meig.)—Fylinghall, 1928 (W.J.F.).

GRAPHOMYA Robineau-Desvoidy

maculata (Scop.)—Fylinghall, 24/6/29 (W.J.F.) ; Hackness, 11/7/36 (C.A.C.).

MYOSPILA Rondani

meditabunda (Fabr.)—Ravenscar, 8/6/24 (P.H.G.) ; Fylinghall, 1928 (W.J.F.).

MESEMBRINA Meigen

meridiana (L.)—Common.

MUSCINA Robineau-Desvoidy

stabulans (Fall.)—STABLE FLY. Common.

MORELLIA Robineau-Desvoidy

hortorum (Fall.)—Robin Hood's Bay, 7/6/24, Fylinghall, 20/6/24 (W.J.F.).

simplex (Loew, H.)—Scarborough, 1895 (H.J.B.).

STOMOXYS Geoffroy

calcitrans (L.)—BITING HOUSE FLY. Common; at times its bite sets up serious septicaemia.

GASTEROPHILUS Leach

intestinalis (De G.)—HORSE BOT-FLY. Not uncommon (H.W.T.).

DRYMEIA Meigen

hamata (Fall.)—Widely distributed.

POGONOMYIA Rondani

brumalis (Rond.)—Forge Valley, 3/8/22 (W.J.F.).

TRICHOPTICOIDES Ringdahl

decolor (Fall.)—Robin Hood's Bay. 1927 (W.J.F.).

ALLOEOSTYLUS Schnabl

diaphanus (Wied.)—Fylinghall, 1928 (W.J.F.).

TRICHOPHTHICUS Rondani

nigritellus (Zett.)—Ravenscar (Y.N.U. Excn., 1924).

LASIOPS Meigen

semicinereus (Wied.)—Fylinghall, 29/6/29 (W.J.F.) ; Pickering, 4-6/6/38 (C.A.C.).

HERA Schnabl

longipes (Zett.)—Forge Valley, 3/8/22; Fylinghall, 29/6/29 (W.J.F.).

LOPHOSCELES Ringdahl

mutatus (Fall.)—Robin Hood's Bay, 7/6/24 (W.J.F.).

POLIETES Rondani

lardarius (Fabr.)—Common.

PSEUDOMORELLIA Ringdahl

albolineata (Fall.)—Fylinghall. 27/7/21; Robin Hood's Bay, 7/6/24 (W.J.F.).

PHAONIA Robineau-Desvoidy

scutellaris (Fall.)—Fylinghall, 1931 (W.J.F.) ; Pickering, 4-6/6/38 (C.A.C.).

signata (Meig.)—Sleights, 29/6/37 (H.B.).

incana (Wied.)—Fylinghall, 1928 (W.J.F.) ; in carrion traps in Raincliffe Wood in the winter (G.B.W.).

HYDROTAEA Robineau-Desvoidy—SWEAT FLIES.*occulta* (Meig.)—Robin Hood's Bay, 2/6/24 (W.J.F.).*irritans* (Fall.)—Abundant; a great pest.*dentipes* (Fabr.)—Raincliffe Wood (G.B.W.); probably abundant.**FANNIA** Robineau-Desvoidy*hamata* (Macq.)—Filey, 8/22 (W.J.F.).*canicularis* (L.)—LESSER HOUSE FLY. Common.*armata* (Meig.)—Ravenscar, 8/6/24 (P.H.G.).*coracina* (Loew, H.)—Ravenscar, 8/6/24 (P.H.G.).*mutica* (Zett.)—In carrion traps in Raincliffe Wood in the winter (G.B.W.).**LISPE** Latreille*tentaculata* (De G.)—Plentiful in damp places near Flixton, 13/6/43 (C.A.C.).**AZELIA** Robineau-Desvoidy*cilipes* Hal.—Ramsdale, 7/9/20 (W.J.F.).*macquarti* (Staeg.)—Ravenscar, 8/6/24 (P.H.G.).*triquetra* (Wied.)—In carrion traps in Raincliffe Wood in the winter (G.B.W.); Ravenscar, 8/6/24 (P.H.G.).**LIMNOPHORA** Robineau-Desvoidy**S. SPILOGONA** Schnabl*contractifrons* (Zett.)—Fylinghall, 1928 (W.J.F.).*brunneisquama* (Zett.)—With the last.*denigrata* (Meig.)—Fylinghall, 1928; Forge Valley, 3/8/22 (W.J.F.).**S. GYMNODIA** Robineau-Desvoidy*humilis* (Zett.)—Scarborough, 1897 (H.J.B.); Fylinghall, 28/6/29 (W.J.F.).**S. LIMNOPHORA** s. s.*maculosa* (Meig.)—Fylinghall, 1928 (W.J.F.).**HEBECNEMA** Schnabl*vespertina* (Fall.)—Fylinghall, 1928 (W.J.F.).**MYDAEA** Robineau-Desvoidy*scutellaris* Rob-Desv.—Ravenscar, 1924 (P.H.G.); Fylinghall, 1928 (W.J.F.).*urbana* (Meig.)—Robin Hood's Bay, 7/6/24; Fylinghall, 1928 (W.J.F.).**HELINA** Robineau-Desvoidy*atripes* (Meade)—Fylinghall, 1928 (W.J.F.).*duplicata* (Meig.)—With the last.*lucorum* (Fall.)—Robin Hood's Bay, 1927 (W.J.F.).*marmortan* (Zett.)—With the last.*latitarsis* Ringd.—Fylinghall, 1927 (W.J.F.).*lasiophthalma* (Macq.)—Fylinghall, 1931 (W.J.F.).*impuncta* (Fall.)—Ravenscar, 8/6/24 (P.H.G.); Fylinghall, 1928 (W.J.F.).*obscuripes* (Zett.)—Ravenscar, 8/6/24 (P.H.G.).**MYCOPHAGA** Rondani*fungorum* (De G.)—Wykeham, 6/6/45 (C.A.C.).

FUCELLIA Robineau-Desvoidy*fucorum* (Fall.)—Common under rotting seaweed.*maritima* (Hal.)—Robin Hood's Bay, 25/6/24 (W.J.F.).**HYDROPHORIA** Robineau-Desvoidy*conica* (Wied.)—Hayburn Wyke, 17/6/24; Fylinghall, 1/7/29 (W.J.F.).**PEGOMYA** Robineau-Desvoidy*bicolor* (Wied.)—Forge Valley, 3/8/22 (W.J.F.).*univittata* (von Ros.)—Hole of Horcum, 31/8/37 (H.B.).*hyoscyami* (Panz.) var. *betæ* (Curt.)—Very common (H.W.T.).**HYLEMYA** Robineau-Desvoidy*strenua* Rob.-Desv.—Common and widely distributed.*nigrimana* (Meig.)—Helwath Beck, 21/9/37 (H.B.).*variata* (Fall.)—Ravenscar, 8/6/24 (P.H.G.).**PEGOHYLEMYIA** Schnabl*gnava* (Meig.)—Scarborough, 1895 (H.J.B.).*signata* (Brischke)—Fylinghall (W.J.F.).**DELIA** Robineau-Desvoidy*nuda* Strobl—Fairly common.*cepetorum* (Meade)—ONION FLY. Very common, at times doing great damage to onion crops.**ERIOISCHIA** Lioy*brassicae* (Bouché)—CABBAGE ROOT FLY. Very common, and in some years a great pest.**MELINIA** Ringdahl*pullula* (Zett.)—Gristhorpe Bay, 3/7/48 (C.A.C.).**EGLE** Robineau-Desvoidy*aestiva* (Meig.)—Robin Hood's Bay, 13/6/24 (W.J.F.).*radicum* (L.)—ROOT FLY. Common.*muscaria* (Fabr.)—Scarborough, 1897 (H.J.B.).*brevicornis* (Zett.)—Scarborough, (H.J.B.).**LEUCOPHORA** Robineau-Desvoidy*grisea* (Fall.)—Hole of Horcum, 31/8/37 (H.B., F.W.E.); Goathland, 4/9/37 (F.W.E.).**ANTHOMYIA** Meigen*pluvialis* (L.)—Fylinghall, 1924 (W.J.F.).**PSEUDOCOENOSIA** Stein, P.*abnormis* Stein., P.—Ramsdale, 7/9/20 (W.J.F.).**CARICEA** Robineau-Desvoidy*intermedia* (Fall.)—Fylinghall, 28/6/28 (W.J.F.).*tigrina* (Fabr.)—With the last.**COENOSIA** Meigen*humilis* Meig.—Pickering, 4-6/6/38 (C.A.C.).**PUPIPARA****HIPPOBOSCIDAE****HIPPOBOSCA** Linnaeus*equina* L.—Occasional (H.W.T.).

MELOPHAGUS Latreille

ovinus (L.)—SHEEP TICK or KED. Very common on sheep.

STENEPTERYX Leach

hirundinis (L.)—In the nests of house martin, Scarborough (E.C.H.) ; West Ayton (G.B.W.).

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Orthoneura	300	Rhypholophus	290	Urophora	302
Oscinella	306	Rondaniola	294		
Oxycera	295			Vestiplex	288
		Sarcophaga	307	Volucella	299
Pachymeria	297	Scaeva	301	Voria	306
Palloptera	302	Scaptomyza	305		
Paragus	301	Scatomyza	306	Wachtliella	294
Parallelomma	306	Scatopse	292	Wagneria	306
Pararhamphomyia		Scellus	298		
	297	Schoenophilus		Xanthempis	297
Pedicia	289		298	Xylophagus	295
Pegohylemyia	310	Schummelia	288	Xyphosia	303
Pegomya	310	Sciara	293		
Pelecocera	299	Sciomyza	304	Zanthogramma	
Pelethophila	303	Scopeuma	306		301
Pemphigocecis	294	Seioptera	302	Zelima	299
Penthesilea	299	Sepsis	304	Zodion	302

Order SIPHONAPTERA — FLEAS

G. B. Walsh

A good start has been made at the compilation of a list of the fleas of the district. The records are found in the lists of the Scarborough Field Naturalists' Society compiled by the Rev. R. A. Taylor (R.A.T.), 1913-15, in an old collection of microscope slides made by W. J. Clarke (W.J.C.), and in lists published in the "Naturalist," 1938, p. 72, by H. Britten (H.B.), and pp. 185-7, by G. B. Walsh (G.B.W.).

No dates are quoted as fleas may be found throughout the year.

PULICIDAE

PULEX Linnaeus

irritans L.—All too common and generally distributed, sometimes in enormous numbers.

ARCHAEOPSYLLA Dampf

erinacei (Bouché)—Common and widely distributed on the hedgehog.

CTENOCEPHALIDES Stiles & Collins

canis (Curt.)—Scarborough, probably generally distributed.

felis (Bouché)—Scarborough, not so common as the last.

SPILOPSYLLUS Baker

cuniculi (Dale)—Widely distributed on rabbits and in their burrows.

CERATOPHYLLIDAE

CERATOPHYLLUS Curtis

styx Roth., N.C.—More than 400 specimens in a nest of the common dipper, (R.A.T.), found by E. A. Wallis far from the nests of its usual host, the sand-martin. In nests of the sand-martin at Hilla Green about a month before the birds were due to return in the spring (G.B.W.).

hirundinis (Curt.)—Common in nests of house-martin. Scarborough (G.B.W.) ; Goathland (H.B.).

farreni Roth., N.C.—With the last (G.B.W.).

garei Roth., N.C.—Goathland (H.B.).

columbae Walck. & Gerv.—Scarborough on the domestic pigeon and bred from larvae in their nests (G.B.W.).

gallinae (Schr.)—Scarborough, on the domestic fowl (R.A.T. and G.B.W.).

fringillae Walk.—Scarborough, bred from larvae in deserted nests of sky-lark (G.B.W.).

MALARAEUS Jordan

penicilliger (Grube)—Scarborough, on the field-mouse and vole (R.A.T.).

NOSOPSYLLUS Jordan

fasciatus (Bosc.)—With the last species (R.A.T.).

MEGABOTHRIS Jordan

walkeri Roth., N.C.—Sleights (H.B.), and with the last two species.

MONOPSYLLUS Kolenati

sciurorum (Schr.)—Scarborough district on red squirrel (W.J.C.).

DASYPSYLLUS Baker

gallinulae (Dale, C.W.)—Widely distributed and common in the Scarborough district. In the nests of the wren (160 specimens), chaffinch, greenfinch, long-tailed tit, etc. (R.A.T.). Bred from larvae in nests of song-thrush, mistle-thrush, blackbird, robin, etc. (G.B.W.).

PARACERAS Wagner, J.

melis (Walk.)—In enormous numbers on young badger found dying by E. B. Lotherington at Staintondale (G.B.W.).

CTENOPHTHALMUS Kolenati

[**agyrtes** Hell.] **s. nobilis** Roth., N.C.—Common in the nests of field-mouse, vole and mole in the Scarborough district (R.A.T.); in moles' nests at Ganton and Brompton (G.B.W.); Sleights (H.B.).

bisectodentatus Kol.—In nests of mole, Scarborough (R.A.T.); Ganton (G.B.W.).

RHADINOPSYLLA Jordan & Rothschild, N.C.

pentacanthus (Roth., N.C.)—Scarborough district, in nests of mouse, vole and mole (R.A.T.); Brompton, Seamer, in nests of mole (G.B.W.).

LEPTOPSYLLIDAE

PALAEOPSYLLA Wagner

sorecis (Dale, C.W.)—Scarborough on field-mouse (R.A.T.).

kohauti Dampf—Ganton, Seamer and Brompton in moles' nests (G.B.W.).

minor (Dale, C.W.)—Common with the preceding species (G.B.W.).

LEPTOPSYLLA Jordan & Rothschild, N.C.

segnis (Schoen.)—Scarborough on house-mouse (G.B.W.).

HYSTRICHOPSYLLIDAE

HYSTRICHOPSYLLA Taschenberg

talpae (Curt.)—Found in the nests of moles wherever examined (G.B.W.); from nests of field-mouse and vole, Scarborough (R.A.T.); Sleights (H.B.).

ARACHNIDA

SPIDERS, HARVESTMEN, PSEUDOSCORPIONS

MITES AND TICKS

Compiled by Mary Wood and F. C. Rimington.

INTRODUCTORY NOTES

W. S. Bristowe, M.A., Sc.D.

A Greek contest which preceded the first Olympic Games, but which possessed none of their sportsmanship, led to Arachne being converted into a spider for daring to challenge the goddess Athene (Minerva) to a spinning competition. Even if she is loved by few, at least she has the satisfaction of lasting fame and of admiration for her craftsmanship. What ought to be recognised more fully is the amazing variety and interest of the habits of Arachne's kin, as well as the vast destruction of insects for which they are responsible. I claim with confidence that they devour annually in Britain a greater weight of insects than that of human beings in the British Isles.

The first book on British spiders was written by a Yorkshireman, Martin Lister in 1678. This book described 34 species and he made "bold to say that no one can find casually in this country any new species not described by me." We now recognise 563 species. This confidence in his own powers may have helped Lister in his profession as a doctor, for in later years he attended Charles II and Queen Anne.

R. H. Meade, a Bradford surgeon, made substantial contributions to our knowledge of British spiders and harvestmen in the middle of the 19th century, but perhaps his most important contribution was an indirect one. He stimulated the interest of a young clergyman, the Rev. O. P. Cambridge, in spiders and introduced him to J. Blackwall. Together these two great pioneers, Blackwall and Cambridge, spanned more than 90 years and provided us with detailed descriptions of more than five hundred species. W. Falconer, the principal contributor to our knowledge of Yorkshire spiders owed much of his skill to the encouragement and help of the Rev. O. P. Cambridge.

A list of spiders can be a dull, though important, record, so some notes on the families are provided below.

The DICTYNIDAE all have a comb on the hind leg with which silk is teased out in such a way that it adds to the difficulty of insects to escape once they have come in contact with it. The DICTYNAE are small spiders which live on the heads of plants and grasses. The CINIFLO's are large and stretch their faintly blue tangled threads over the surface of walls, rotten tree stumps, etc.

OONOPS is a tiny flesh-pink spider about 3 mm. in length, which lives under stones and bark, or in dry vegetation, including birds' nests.

Like the three species of DYSDERIDAE it has six eyes in contrast to the eight possessed by all the rest.

DYSDERA has a red cephalothorax and legs, with a pale, almost white body. It lives under stones during the day and has huge jaws with which it can pierce the armour of woodlice. HARPACTEA lives in similar places and under loose bark. The cephalothorax is dark-brown and the abdomen very elongate. Unlike the other two DYSDERIDS, SEGESTRIA builds a web. It lives in a tube beneath bark or stones and there are a dozen straight "fishing lines" from the entrance which give warning of an insect's approach. The abdominal pattern is similar to that of an adder.

The DRASSIDAE are usually sombre and unicolorous. MICARIA is an exception in that in sunlight, its black body (with minor white markings) glitters with rainbow tints. It runs frequently in company with black ants and can easily be mistaken for one. Some of the enemies of spiders which dislike ants avoid MICARIA.

Most DRASSIDS live in silk cells under stones, etc., during the day and emerge on hunting excursions at night. ZELOTES is black, DRASSODES is light-brown; SCOTOPHOEUS, a domestic species, is shiny grey. They are all short-sighted but rapid and fierce in attack. DRASSODES leaps over or round a formidable opponent trailing a band of silk to anchor and enmesh it.

The CLUBIONIDAE have somewhat similar habits to those of the DRASSIDAE and the CLUBIONAE look much like the DRASSODES. ANYPHAENA lives on the twigs and branches of trees. The THOMISIDAE are called CRAB SPIDERS because of the way they hold their legs, and the ease with which they can walk sideways. They sit with legs outstretched and seize insects which approach them. Those of the genus XYSTICUS are remarkable for the males fastening the females to the ground with silk before mating with them. The females, as in most spiders, are larger and are apt to be dangerous.

The SALTICIDAE are the longest-sighted spiders. They stalk their prey and leap on them. SALTICUS SCENICUS is the small, zebra-marked spider which hunts on the outside of buildings in sunlight. The LYCOSIDAE are WOLF SPIDERS, LYCOSAE hunt on the ground and can be seen almost everywhere on a sunny day. When eggs are laid they are enclosed in a silk covering and attached to the mother's spinnerets. Later, when the young hatch, the babies are carried for a time on her back.

TARENTULA and TROCHOSA are larger and thicker set, the latter chiefly nocturnal. ARCTOSA lives on sand-hills and excavates burrows from which it hunts. PIRATA is chocolate-brown and lives mostly on marshy ground.

PISAURA is a long-legged WOLF SPIDER which trundles clumsily about with a huge egg-sac in its jaws until the young are about to hatch, when a silk tent is built which serves as a nursery over which the mother stands guard.

These last three families, SALTICIDAE, LYCOSIDAE and PISAURIDAE, all have interesting courtships because they are the long-sighted families. The males of the first two families do weird antics in front of the females to advertise their identity and to stimulate the female's interest. The male PISAURA presents the female with a wedding present of an insect carefully wrapped up in silk.

The AGELENIDAE include the sheet-building HOUSE SPIDERS (TEGENARIA) and their relations, but ARGYRONETA is of course the famous WATER SPIDER which fills a diving-bell with air below the surface of the water in a pond or ditch and spends its life there.

The TETRAGNATHIDAE are long, slim orb-weavers which live near water except for the PACHYGNAETHAE which have forsaken snares and hunt at the roots of plants. All have large jaws and the males grip those of the females to avoid "accidents". In some species they are held shut, in others they are wedged open.

The ARGYOPIDAE all build orb-webs. In META the centre is an open ring (as in TETRAGNATHA). In ZYGIELLA webs a segment is missing as will be noticed in the window-frame species Z. LITTERATA. The centres are meshed in ARANEA and there is no segment missing. The hump-backed CYCLOSA builds a long silken band in the snare in which debris is placed. ARANEA DIADEMA is the garden spider and A. REAUMURI is the still more robust species which is usually encountered amongst heather or grass. It is probably our heaviest spider when fully grown. A. CUCURBITINA is bright green with a red tip to its abdomen.

The THERIDIIDAE are rather small pea-bodied spiders which make scaffolding webs. The largest species, THERIDION TEPIDARIORUM, is restricted to hot-houses where it slings egg-sacs with brown silk coverings in its web. T. NOTATUM is a garden species which has the remarkable habit of feeding its young from its own mouth.

The MIMETIDAE are pirates. ERO invades the webs of the THERIDIIONS and destroys the owners. It feeds entirely on other spiders. The LINYPHIIDAE include numerous small black-bodied "money-spiders". Spiders of this family build sheet-webs and they run upside down on the lower surface. These are the chief gossamer spiders, with ERIGONE as one of the commonest.

Spiders of the genus LINYPHIA are the largest and most conspicuous species whose sheet-webs adorn bushes and beautify the countryside when they become dew-laden in autumn.

By contrast with true spiders the HARVESTMEN (PHALANGIDEA) may seem to be dull. They differ from spiders in having two eyes, pincer jaws, no poison-glands, and a compact body which is not divided into two parts.

They are mostly long-legged, especially LIOBUNUM, and all feed at night. They catch small invertebrates, but they also act as scavengers and will sometimes chew vegetable matter. NEMASTOMA LUGUBRE is unlike the other species in having short legs and in being black with two white spots. It is common under stones, etc.

The PSEUDOSCORPIONS (CHELONETHIDA) are all small and even the largest, DACTYLOCHELIFER LATREILLEI, is only a few millimetres in length. They resemble a tailless scorpion and have pincer claws with poison glands, which help them to capture small insects.

They are to be found amongst leaves and under stones, bark, etc. LAMPROCHERNES NODOSUS is often to be seen attached to the legs of flies, a habit thought to provide it with a means of dispersal.

In conclusion let us remind ourselves of the Westmorland couplet :

“ Kill a spider, bad luck yours will be,
Until of flies you’ve swatted fifty-three.”

ARANEAE — SPIDERS

The spiders known to inhabit Great Britain comprise 563 species, of which 328 have been recorded from Yorkshire. The present list from the Scarborough district totals 217 species.

The collectors responsible for this list have been :—

A.E.B.—A. E. Barrett.

R.G.—R. Gilchrist.

D.W.B.—D. W. Bevan.

J.W.H.H.—J. W. H. Harrison.

H.B.—H. Britten, fil.

T.S.—T. Stainforth.

H.C.D.—H. C. Drake.

R.A.T.—Rev. R. A. Taylor.

W.F.—W. Falconer.

G.B.W.—G. B. Walsh.

R.J.F.—R. J. Flintoff.

W.P.W.—W. P. Winter.

The records of H. Britten have all been confirmed by Dr. A. Randall Jackson ; those of Rev. R. A. Taylor by W. Falconer (Spiders, Harvestmen and Pseudoscorpions), Dr. C. F. George (Earth-mites), and C. D. Soar (Water-mites).

The status of the species has not been given save where it has been stated by one or more of the collectors.

Abbreviations :

Nat.—“ The Naturalist.” m.—male. f.—female. imm.—immature.

At the time of capture several species found in the district represented additions to the County List :—

Dysdera crocata Koch, C. L.

Zelotes apricorum (Koch, L.)

Cheiracanthium erraticum (Walck.)

Xysticus audax (Schr.)

Philodromus emarginatus (Schr.)

Trochosa spinipalpis Cambr., F. O. P.

Amaurobius terrestris (Wid.)

Singa hamata (Clerck)

Theridion varians Hahn

Theridion simile Koch, C. L.

Lessertia dentichelis (Sim.)

Mengea scopigera (Grube)

Syedra pholcommoides (Cambr., O. P.)

The following are the sources of the records in this list :—

1. "The Victoria County History of Yorkshire"—Arachnida section
2. "The Spiders of Yorkshire"—W. Falconer, "Naturalist," 1918 to 1922.
3. "The Naturalist"—many records of all sections of Arachnida.
4. The record books of Mr. H. Britten and of the Scarborough Field Naturalists' Society.

The compilers are most grateful to Dr. W. S. Bristowe for his constant advice and for writing the introduction; also to Mr. E. Browning and Mr. J. H. P. Sankey for their help in checking the nomenclature, and to Mr. F. Dixon and Mr. H. Britten for many helpful suggestions.

The arrangement and nomenclature are as used in W. S. Bristowe's "The Comity of Spiders" (Ray Society, 2 vols., 1939-41), modified in the light of the decision of the International Conference on Zoological Nomenclature, Paris, June, 1948; at which it was agreed that Clerck's names should be valid. Where Clerck's name differs from that used by Dr. W. S. Bristowe, the latter name is given as a synonym.

DICTYNIDAE

DICTYNA Sundevall

arundinacea (L.)—Langdale Moors, Ringing Keld Bog, Levisham, 1913-14 (R.A.T.); Rillington (W.F., Nat., 1918, p. 321); Falling Foss, m. and f., 1936 (H.B.).

uncinata Thor—Scarborough, imm. m., 1913 (R.A.T.); Derwent Carrs, 1916 (T.S.).

latens (Fabr.)—Thornton-le-Dale, Levisham, 1914 (R.A.T., W.F., Nat., 1918, p. 321); Beckhole, 1930 (H.B.).

CINIFLO Blackwall (= *Amaurobius* Koch, C. L.)

ferox (Walck.)—Uncommon; Scarborough, one f. (H.C.D., Nat., 1908, p. 399); Cayton Bay in hen roost, two f., 1913 (R.A.T.).

similis (Blackw.)—Common all over the district (R.A.T.).

fenestralis (Strom)—Not as common as *C. similis*, but fairly frequent (R.A.T.).

OONOPIDAE

OONOPS Templeton

pulcher Templ.—Many records from Scarborough district (R.A.T., 1913; W.F., 1904 and 1918).

DYSDERIDAE

DYSDERA Latreille

crocata Koch, C. L.—Only record, Scarborough in a garden, three f. (R.G., Nat., 1906, p. 200).

HARPACTEA Bristowe (= *Harpactes* Templeton)

hombergi (Scop.)—Scarborough, three f., 1913 (R.A.T.); Robin Hood's Bay and Falling Foss, f., 1936 (H.B.).

SEGESTRIA Latreille

senoculata (L.)—Beastcliff, etc. (T.S.) ; Hackness, 1913 (R.A.T.) ; common in the Scarborough district under the bark of dead trees (G.B.W.).

DRASSIDAE**DRASSODES** Westring

lapidosus (Walck.)—Fairly common under stones and bark, 1913 (R.A.T.) ; Ellerbeck, etc. (H.B., Nat., 1936, p. 221).

signifer (Koch, C. L.)—Ringing Keld Bog, m., 1914 (R.A.T.).

SCOTOPHOEUS Simon

blackwalli (Thor)—Scarborough (G.B.W.).

ZELOTES Gistel

apricorum (Koch, L.)—Staintondale, four f., one imm. m., 1910 (T.S.) ; Hayburn Wyke, one m. (T.S., Nat., 1922, p. 391).

MICARIA Westring

pulicaria (Sund.)—Bickley (H.C.D., Nat., 1908, p. 299) ; Scarborough (W.F.) ; and Staintondale (R.A.T., Nat., 1921, p. 313) ; Rillington, 1927 (W.F.) ; Helwath Beck, 1937 (H.B.).

CLUBIONIDAE**CLUBIONA** Latreille

terrestris Westr.—Forge Valley (R.A.T., Nat., 1921, p. 181) ; Ravenscar, m., 1904, and Rillington, f., 1927 (W.F.) ; Helwath Beck, f., 1937 (H.B.).

stagnatilis Kulcz.—Ringing Keld Bog, m., 1913 (R.A.T.).

phragmitis Koch, C. L.—Staintondale (T.S., Nat., 1921, p. 201).

holosericea (L.)—Staintondale (T.S., Nat., 1921, p. 201) ; Scarborough and Scalby, one m., one f., 1904 (W.F.).

diversa Cambr., O. P.—Staintondale and Cloughton, 1913-14 (R.A.T.) ; Rillington, f., 1927 (W.F.).

reclusa Cambr., O. P.—Many records from the Scarborough district (W.F., 1904 ; R.A.T., 1913-14).

lutescens Westr.—Raincliffe Wood, m. and f., 1913-14 (R.A.T.) ; Forge Valley and Scarborough (T.S., Nat., 1921, p. 201).

trivialis Koch, L.—Scarborough, m., 1913 (R.A.T.) ; Ringing Keld Bog, m. and f., 1904 (W.F.) ; Ellerbeck, m., 1937 (H.B.).

brevipes Blackw.—Hole of Horcum, m., Helwath Beck, m., 1937 (H.B.).

compta Koch, C. L.—Langdale End and Hayburn Wyke (T.S., Nat., 1921, p. 205) ; Falling Foss and Littlebeck, 1914 (W.P.W.) ; Helwath Beck, m., 1937 (H.B.).

CHEIRACANTHIUM Koch, C. L.

erraticum (Walck.)—Ringing Keld Bog, common, 1904 (W.F.) ; Whitby Moors, f., 1913 (R.A.T.) ; Helwath Beck, f., 1936 (H.B.).

virescens (Sund.)—Rare ; Ellerbeck, f., 1936 (H.B.).

AGROECA Westring

brunnea (Blackw.)—On the moors near the Falcon Inn, where its egg-cocoons are not uncommon in the heather (G.B.W.).

proxima (Cambr., O. P.)—Thornton-le-Dale, 1914 (R.A.T.) ; Rillington, f., 1927 (W.F.).

ZORA Koch, C. L.

spinimana (Sund.)—Ravenscar, Levisham, etc. (W.F., Nat., 1921, p. 204).

ANYPHAENIDAE

ANYPHAENA Sundevall

accentuata (Walck.)—Hayburn Wyke (T.S., Nat., 1921, p. 203) ; Beckhole and Goathland, 1936-37 (H.B.).

THOMISIDAE—CRAB SPIDERS

XYSTICUS Koch, C. L.

kochi Thor—Forge Valley, one m., 1919 (T.S.).

audax (Schr.)—Rare ; Langdale End, one f., 1914 (R.A.T.).

viaticus (L.)—Widespread ; records numerous.

sabulosus (Hahn.)—Rare ; Hole of Horcum, f., 1937 (H.B.).

erraticus (Blackw.)—Flamborough cliffs, one f. (T.S., Nat., 1921, p. 177) ; Hilla Green, 1924 (G.B.W.).

OXYPTILA Simon

trux (Blackw.)—Widespread ; records numerous.

PHILODROMUS Walckenaer

aureolus (Clerck)—Widespread ; records numerous.

aureolus cespiticolis Walck.—Rillington, Scarborough, Cloughton (W.F., Nat., 1921, p. 179) ; Scarborough South Cliff, m. and f., 1913 (R.A.T.).

emarginatus (Schr.)—Rare ; Wragby Wood, imm. f., Helwath Beck, f., 1936 (H.B.).

SALTICIDAE—JUMPING SPIDERS

SALTICUS Latreille

scenicus (Clerck)—ZEBRA SPIDER. Fairly common in and around Scarborough on walls and trees (G.B.W.) ; Rillington, abundant (W.F., Nat., 1922, p. 235).

cingulatus (Panz.)—Rillington and Scarborough (W.F., R.A.T., Nat., 1922, p. 235).

HELIOPHANUS Koch, C. L.

cupreus (Walck.)—Rare ; Levisham, near station, one f., 1906 (W.F.).

NEON Simon

reticulatus (Blackw.)—Ringing Keld Bog, one f., Hayburn Wyke, one f., 1904-5 (W.F.) ; Langdale End, one f., 1913 (R.A.T.).

EUOPHRYS Koch, C. L.

frontalis (Walck.)—Scarborough Mere, Scalby Mills, m. and f., Levisham, one m., 1904 (W.F.).

LYCOSIDAE—WOLF SPIDERS

LYCOSA Latreille

amentata (Clerck) (= *L. saccata* L.)—Records numerous ; one of the commonest of the genus (R.A.T.) ; Rillington, f. of the form described as *L. postuma* Cambr., O. P., 1927 (W.F.).

nigriceps Thor—Scarborough and Ringing Keld Bog, m. and f., 1904 (W.F.) ; 1913 (R.A.T.) ; Hayburn Wyke and Beastcliff (T.S., Nat., 1922, p. 174).

pullata Clerck—Scarborough, fairly common, 1913 (R.A.T.).

tarsalis Thor—Ravenscar (W.F., Nat., 1922, p. 233).

lugubris (Walck.)—Hole of Horcum, 1937 (H.B.) ; Falling Foss (W.P.W., Nat., 1922, p. 174).

herbigrada (Blackw.)—Robin Hood's Bay, f. (T.S., Nat., 1922, p. 392).

TARENTULA Clerck

accentuata (Latr.)—Bickley, one m. and one f. (H.C.D., Nat., 1908, p. 299).

pulverulenta (Clerck) (= *T. carinata* Oliv.)—Scarborough, 1913 (R.A.T.) ; Beckhole, 1936 (H.B.).

TROCHOSA Koch, C. L.

terricola Thor—Widespread and fairly common, 1913 (R.A.T.).

spinipalpis Cambr., F. O. P.—Helwath Beck, four f., 1937 (H.B.).

ARCTOSA Koch, C. L.

perita (Latr.)—Scarborough North Bay, a few imm. examples, 1904 (W.F.).

PIRATA Sundevall

hygrophila (Thor)—Goathland, one f. (J.W.H.H., Nat., 1915, p. 27).

piratica (Clerck)—Fairly common near Scarborough, 1913 (R.A.T.) ; Fylingdales Moor, two f., 1936 (H.B.) ; Flamborough, 1947 (G.B.W.).

PISAURIDAE

PISAURA Simon

mirabilis (Clerck) (= *P. listeri* Scop.)—Robin Hood's Bay, one f., 1911 (T.S.) ; Langdale End, 1921 (D.W.B.) ; Littlebeck, 1936 (H.B.).

AGELENIDAE

CRYPHOECA Thor

silvicola (Koch, C. L.)—Silpho Moor, one f., 1913 (R.A.T.) ; Falling Foss and Littlebeck (H.B., 1936 and W.P.W., Nat., 1921, p. 315).

AMAUROBIUS Koch, C. L.

atropos (Walck.)—Common in the district, a northern species rarely found in the south. Very large numbers taken from under loose stones, Bloody Beck, 1913 (R.A.T.).

terrestris (Wid.)—Cayton Bay, 3rd record of this rare spider for Britain (R.G., Nat., 1906, p. 200) ; Scarborough (H.C.D., Nat., 1908, p. 299).

ARGYRONETA Latreille

aquatica (Clerck)—Local and uncommon.

TEGENARIA Latreille

domestica (Clerck)—HOUSE SPIDER. Abundant everywhere.

TEXTRIX Sundevall

denticulata (Oliv.)—Common ; large numbers of both sexes taken above Cloughton Wyke from under stones, 1913 (R.A.T.).

ANTISTEA Simon

elegans (Blackw.)—A scarce spider frequenting bogs ; Ringing Keld Bog, one f., Scalby Mills, four m., two f., 1904 (W.F.).

HAHNIA Koch, C. L.

nava (Blackw.)—Rare ; Langdale End, one m., 1913 (R.A.T.).

montana (Blackw.)—Widespread, many records.

TETRAGNATHIDAE

TETRAGNATHA Latreille

extensa (L.)—Harwood Dale, f. (R.G., Nat., 1906, p. 200) ; Rillington, m. and f., 1927 (W.F.).

montana Sim.—Widespread, many records.

obtusa Koch, C. L.—Rare ; a south of England spider. Beckhole, 1936 (H.B.).

PACHYGNATHA Sundevall

degeeri Sund.—Frequent in the Scarborough district (R.A.T.).

clercki Sund.—Widespread, many records.

ARGYOPIDAE

META Koch, C. L.

reticulata (L.)—The commonest British spider, abundant everywhere.

forma mengii Thor, the smaller, darker spring brood, Beckhole, Sleights, etc., very common, 1936 (H.B.).

merianae (Scop.)—Widespread, many records.

CYCLOSA Menge

conica (Pall.)—Rare ; Beckhole, melanic m., 1936 (H.B.).

SINGA Koch, C. L.

hamata (Clerck)—Rare ; Fylingdales Moor, imm. f., 1936 (H.B.) ; Oliver's Mount, m. and f., 1913 (R.A.T.).

ARANEA Linnaeus

diademata Clerck—Widespread ; many records.

cucurbitina Clerck—Common on trees throughout the district (G.B.W.) ; *forma opisthographa* Kulcz.—Robin Hood's Bay, m., 1937 (H.B.).

sturmi (Hahn)—Scampston, one f. (W.F., Nat., 1921, p. 84).

umbratica Clerck (= *A. sexpunctata* L.)—Hackness, etc., 1914 (R.A.T.) ; Falling Foss, 1936 (H.B.).

quadrata Clerck (= *A. reaumuri* Scop.)—Falling Foss, f., Ellerbeck, m. and f., Hole of Horcum, 1936-37 (H.B.).

cornuta Clerck (= *A. foliata* Fourcr.)—Cayton Bay, Filey (T.S., R.A.T., Nat., 1921, p. 85).

ZYGIELLA Cambridge, F. O. P.

x-notata Clerck (= *Z. litterata* Oliv.)—Common in bushes and hedgerows (R.A.T.).

atrica (Koch, C.L.)—Widespread ; many records.

THERIDIIDAE

THERIDION Walckenaer

vittatum Koch, C. L.—Forge Valley, one m., 1919 (T.S.) ; Beckhole, 1936 (H.B.) ; Rillington, f., 1927 (W.F.).

sisyphium (Clerck) (= *T. notatum* L.)—Widespread ; many records.
varians Hahn—Scarborough (H.C.D., Nat., 1905, p. 299) ; Scampston, f., 1906 (W.F.).

simile Koch, C. L.—Thornton-le-Dale and Levisham (R.A.T., 1914 and W.F., Nat., 1918, p. 321) ; Beckhole, etc., 1936 (H.B.).

tepidariorum Koch, C. L.—The very common greenhouse spider.

denticulatum (Walck.)—Scarborough, 1904 (W.F.) ; Derwent Carrs, 1916 (T.S.).

pallens Blackw.—Forge Valley and Ringing Keld Bog, 1913-14 (R.A.T.) ; Helwath Beck, 1936 (H.B.).

lineata (Clerck) (= *T. redimitum* L.)—Wragby Wood, Ellerbeck and Helwath Beck, 1936-37 (H.B.) ; Scarborough South Cliff, 1913 (R.A.T.).

PHOLCOMMA Thor

gibbum (Westr.)—Widespread ; many records.

THEONOE Simon

minutissima (Cambr., O. P.)—Rare ; Ringing Keld Bog, two m., 1913 (R.A.T.).

STEARODEA Sundevall

bipunctata L.—Scarborough, 1913 (R.A.T.) ; Levisham (J.W.H.H.).

ROBERTUS Cambridge, O. P.

lividus (Blackw.)—Fairly common (R.A.T.).

NESTICUS Thor

cellulanus Clerck—Locally common ; Hayburn Wyke, many m. and f., 1904 (W.F.) ; Levisham and Goathland (W.F., Nat., 1920, p. 387).

MIMETIDAE

ERO Koch, C. L.

furcata (Vill.)—Cayton Bay, 1913 (R.A.T.) ; Levisham, Ringing Keld Bog, Hayburn Wyke, etc., 1904-6 (W.F.). These records were entered as *E. thoracica* Wid. and may refer to *E. furcata* (Vill.), or to *E. cambridgei* Kulcz., as these two species were not separated until 1912.

LINYPHIIDAE

CERATINELLA Emerton

brevis (Wid.)—Widespread ; many records.

brevipes (Westr.)—Widespread ; many records.

BLANIARGUS Simon

herbigradus (Blackw.)—Thornton-le-Dale, f., 1914 (R.A.T.) ; Scarborough Mere (W.F., Nat., 1919, p. 267).

METOBOCTRUS Simon

prominulus (Cambr., O. P.)—Scarborough, one f., 1913 (R.A.T.) ; Cayton Bay, three f. (W.F., Nat., 1919, p. 236) ; Helwath Beck, m., 1937 (H.B.).

PANAMOMOPS Simon

sulcifrons (Wid.)—Rare ; Scarborough (H.C.D., Nat., Aug., 1908) ; Langdale End, one f. (R.A.T., Nat., 1919, p. 135).

LOPHOCARENUM Menge

nemorale (Blackw.)—Ringing Keld Bog, three m. and three f., among pine needles, 1913 (R.A.T.) ; Staintondale, f. (T.S., Nat., 1919,

TRICHOPTERNA Kulczynski

p. 22).

mengei (Sim.)—Ringing Keld Bog, among sphagnum, 1913 (R.A.T.).

thorelli (Westr.)—Rare ; Langdale End, one m., 1913 (R.A.T.).

ENTELECARA Simon

acuminata (Wid.)—Rare ; Beckhole, m., 1936 (H.B.).

erythropus (Westr.)—Widespread ; many records.

MINYRIOLUS Simon

pusillus (Wid.)—Rare ; Ringing Keld Bog, m. and f., 1913 (R.A.T.).

NEMATOGMUS Blackwall

obscurus (Blackw.)—Rillington, m. and f., 1927 (W.F.) ; Sleights, 1936 (H.B.).

SILOMETOPUS Simon

elegans (Cambr., O. P.)—Rare ; Ringing Keld Bog, one m., two f., 1914 (R.A.T.) ; Sleights, m., 1936 (H.B.).

HYPSELISTES Simon

jacksoni (Cambr., O. P.)—Rare ; Ellerbeck, imm. f., 1936 (H.B.).

POCADICNEMIS Simon

pumila (Blackw.)—Widespread ; many records.

GNATHONARIUM Karsch

dentatum (Wid.)—Carr Naze, Filey (T.S., Nat., 1919, p. 402) ; Forge Valley (T.S., Nat., 1922, p. 391).

TISO Simon

...

vagans (Blackw.)—Scarborough, m., 1913 (R.A.T.) ; Helwath Beck, m., 1937 (H.B.).

DIPLOCEPHALUS Berthold

cristatus (Blackw.)—Scarborough, f., 1913 (R.A.T.).

latifrons (Cambr., O. P.)—Cayton and Oliver's Mount, 1913 (R.A.T.).

permixtus (Cambr., O. P.)—Sleights, m., 1935 (H.B.).

picus (Blackw.)—Raincliffe Wood, f., 1904 (W.F.) ; Oliver's Mount, 1913 (R.A.T.) ; Beckhole, m., 1936 (H.B.).

SAVIGNIA Blackwall

frontata Blackw.—Numerous records near Scarborough (R.A.T., H.B.).

ARAEONCUS Simon

humilis (Blackw.)—Helwath Beck, m., 1936 (H.B.).

hiemalis (Blackw.)—Raincliffe Wood and Ringing Keld Bog, m. and f., 1913 (R.A.T.) ; Folkton, f. (W.F., Nat., 1919, p. 25).

DICYMBIUM Menge

nigrum (Blackw.)—Widespread ; many records.

tibiale (Blackw.)—Rare ; Ringing Keld Bog, m. and f., 1913 (R.A.T.).

MONOCEPHALUS Smith, F. P.

fuscipes (Blackw.)—Raincliffe Wood, f., 1904 (W.F.) ; Beckhole, f., 1936 (H.B.).

THYREOSTHENIUS Simon

biovatus (Cambr., O. P.)—Helwath Beck, in nests of *Formica pratensis*, 1936-37 (H.B.) ; common in nests of *F. rufa* at Barns Cliff and in Langdale (G.B.W.).

becki (Cambr., O. P.)—Rare ; Raincliffe Wood, one f., 1914 (R.A.T.).

TROXOCHRUS Simon

scabriculus (Westr.)—Rillington, f., 1927 (W.F.).

TAPINOCYBA Simon

praecox (Cambr., O. P.)—Flamborough (T.S., Nat., 1919, p. 140).

AULACOCYBA Simon

subitanea (Cambr., O. P.)—Derwent Carrs (T.S.) ; Rillington, numerous (W.F., Nat., 1919, p. 235).

COLOBOCYBA Simon

pallens (Cambr., O. P.)—Raincliffe Wood, two f., a rare spider, 1904 (W.F.) ; Ringing Keld Bog., one m., 1913 (R.A.T.).

WALCKENAERA Blackwall

acuminata Blackw.—Oliver's Mount, f., 1914 (R.A.T.) ; Filey Cliffs (T.S., Nat., 1919, p. 268).

WIDERIA Simon

antica (Wid.)—Scarborough and Cloughton, m. and f., 1913 (R.A.T.) ; 1904 (W.F.).

fugax (Cambr., O. P.)—Rare ; Raincliffe Wood, one m., 1913 (R.A.T.).

TRACHYNELLA Braendegaard

nudipalpis (Westr.)—Scarborough South Cliff, one f., 1913 (R.A.T.) ; Sleights, f., Goathland, f., 1938-39 (H.B.).

EVANSIA Cambridge, O. P.

merens (Cambr., O. P.)—Harwood Dale in nests of *Formica rufa* (G.B.W.).

CORNICULARIA Menge

cuspidata (Blackw.)—Widespread ; many records.

unicornis (Cambr., O. P.)—Ringing Keld Bog, one f., 1904 (W.F.) ; Forge Valley, one m., 1914 (R.A.T.).

vigilax (Blackw.)—Hayburn Wyke, f. (T.S., Nat., 1922, p. 391).

GONATIUM Menge

rubellum (Blackw.)—Widespread ; many records.

rubens (Blackw.)—Very common in bushes and shrubs (R.A.T.).

HYPOMMA Dahl

bituberculata (Wid.)—Ravenscar, f., 1904 (W.F.) ; Scarborough, m. and f., 1913 (R.A.T.).

cornuta (Blackw.)—Rillington, etc. (W.F., Nat., 1919, p. 324) ; Langdale End (T.S., Nat., 1922, p. 391).

DISMODICUS Simon

bifrons (Blackw.)—Widespread ; many records.

GONGYLIDIUM Menge

rufipes (L.)—Scarborough, Cayton and Levisham, 1906 (W.F.) and 1913 (R.A.T.) ; Beckhole, etc., 1936-37 (H.B.).

ERIGONIDIUM Simon

graminicolum (Sund.)—Rillington, f., 1927 (W.F.).

ERIGONE Savory

dentipalpis (Wid.)—Scarborough South Cliff, m. and f., 1913 (R.A.T.) ; Ellerbeck, f., 1936 (H.B.).

atra (Blackw.)—Scarborough South Cliff, m. and f., 1913 (R.A.T.).

promiscua (Cambr., O. P.)—Widespread ; many records.

GONGYLIDIELLUM Simon

vivum (Cambr., O. P.)—Hayburn Wyke, f., 1905 (W.F.) ; Ringing Keld Bog, m., 1904 (W.F.) and 1913 (R.A.T.).

OEDOTHORAX Bertkau

agrestis (Blackw.)—Goathland (W.F., Nat., 1922, p. 325) ; Forge Valley and Langdale End (T.S., Nat., 1922, p. 391).

fuscus (Blackw.)—Widely distributed and quite common (W.F.).

retusus (Westr.)—Widespread ; many records.

apicatus (Blackw.)—Hole of Horcum and Helwath Beck, 1937 (H.B.).

gibbosus (Blackw.)—Ringing Keld Bog, m., 1914 (R.A.T.).

tuberosus (Blackw.)—Beckhole, 1936 (H.B.).

LOPHOMMA Menge

punctata (Blackw.)—Scalby and Ringing Keld Bog., m. and f., a hygrophilous species and a scarce spider, 1904 (W.F.).

CORYPHAEOLANUS Thor

distinctus (Sim.)—Rillington, f., 1927 (W.F.).

LESSERTIA Smith, F. P.

dentichelis (Sim.)—Scalby Mills, under tidal drift, m. (T.S., Nat., 1920, p. 23) ; third British record.

PEPONOCRANIUM Simon

ludicrum (Cambr., O. P.)—Scarborough, 1904 (W.F.) and 1913 (R.A.T.) ; Beckhole, etc., 1936 (H.B.).

MASO Simon

sundevalli (Westr.)—Widespread ; many records.

HILAIRA Simon

excisa (Cambr., O. P.)—Rare ; Ringing Keld Bog., one f., and Hayburn Wyke, two f. One of the Hayburn Wyke specimens was remarkable in having only half of its complement of eyes in a serviceable condition, two laterals on the same side being obsolete and two centrals being imperfectly formed (W.F., Nat., 1906, p. 29).

PHAULOTHRIX Bertkau

huthwaiti (Cambr., O. P.)—Rare ; Hayburn Wyke, m. and f., under stones on foreshore, 1905 (W.F.) ; Derwent Carrs, 1916 (T.S.).

PORRHOMMA Simon

pygmaeum (Blackw.)—Cayton Bay, Raincliffe Wood, etc., 1914 (R.A.T.) ; Beckhole, 1936 (H.B.).

microphthalmum (Cambr., O. P.)—Ringing Keld Bog, one f., 1904, Sleights, f., 1936 (H.B.).

egeria Sim.—Rare ; Raincliffe Wood, one f., 1914 (R.A.T.).

pallidum Jacks.—Scarborough, 1913 (R.A.T.).

proserpina (Sim.)—Helwath Beck, 1937 (H.B.).

BATHYPHANTES Menge

approximatus (Cambr., O. P.)—Raincliffe Wood, one m., 1914 (R.A.T.).

nigrinus (Westr.)—Widespread in damp places ; many records.

concolor (Wid.)—Widespread ; many records.

gracilis (Blackw.)—Ravenscar, m. and f., 1904 (W.F.).

dorsalis (Wid.)—Scampston (W.F., Nat., 1920, p. 203) ; Derwent CARRS, 1916 (T.S.).

pullatus (Cambr., O. P.)—Scampston, one f. (W.F., Nat., 1920, p. 62) ; Goathland and Helwath Beck, 1937 (H.B.).

POECILONETA Kulczynski

globosa (Wid.)—Widespread ; many records.

LABULLA Simon

thoracica (Wid.)—Raincliffe Wood, m., 1914 (R.A.T.) ; Falling Foss (W.P.W.) ; Hayburn Wyke (W.F., Nat., 1920, p. 296).

LINYPHIA Latreille

montana (Clerck)—Scarborough, plentiful, 1904 (W.F.) and 1913 (R.A.T.) ; Beckhole, etc., 1936 (H.B.).

insignis Blackw.—Raincliffe Wood, m. and f., 1913 (R.A.T.) ; Scampston (W.F., Nat., 1920, p. 297).

hortensis Sund.—Scarborough, 1913 (R.A.T.) ; Beckhole, 1936 (H.B.).

peltata Wid.—Falconer says, "Widely distributed throughout the county," but no specific records from the Scarborough district.

clathrata Sund.—Scarborough South Cliff, f., 1914 (R.A.T.) ; Goathland, f. and Littlebeck, m., 1936 (H.B.).

pusilla Sund.—Widespread ; many records.

STEMONYPHANTES Menge

lineata (L.)—Scarborough, m. and f., 1913 (R.A.T.).

TAPINOPA Westring

longidens (Wid.)—Holbeck Gardens (W.F., Nat., 1922, p. 392) ; Fylingdales, Sleights, 1935 (H.B.) ; Oliver's Mount, m. and f., 1913 (R.A.T.).

BOLYPHANTES Menge

alticeps (Sund.)—Oliver's Mount, 1913 (R.A.T.) ; Helwath Beck, f., 1936 (H.B.).

luteolus (Blackw.)—Scarborough South Cliff, m. and f., 1913 (R.A.T.) ; Helwath Beck, f., 1937 (H.B.).

LEPTHYPHANTES Menge

minutus (Blackw.)—Scarborough, one f., 1914 (R.A.T.) ; Hole of Horcum and Falling Foss, 1914 (W.P.W.).

nebulosus (Sund.)—Local ; Scarborough, 1913-14 (R.A.T.).

alacris (Blackw.)—Raincliffe Wood, f., 1913 (R.A.T.) ; Scampston, etc. (W.F., Nat., 1920, p. 255).

cristatus (Menge)—Local ; Hayburn Wyke, f. (T.S., Nat., 1920, p. 205) ; Levisham and Goathland, 1906 (W.F.).

obscurus (Blackw.)—Local ; Hayburn Wyke, Raincliffe Wood, 1904 (W.F.) ; Beckhole, 1936 (H.B.).

pallidus (Cambr., O. P.)—Rare ; Raincliffe Wood, two m., 1904 (W.F.).

leprosus (Ohl.)—Scarborough in cellar, m., 1914 (R.A.T.) ; Derwent Carrs, 1916 (T.S.).

zimmermanni Bertk.—The most abundant and generally distributed species of the genus in Yorkshire, many records.

tenuis (Blackw.)—Less abundant than *L. zimmermanni*, but widely dispersed.

flavipes (Blackw.)—Langdale End, m. (T.S., Nat., 1920, p. 205).

ericaeus (Blackw.)—Widespread ; many records.

mengei Kulcz.—Goathland, m., 1938 (H.B.).

tenebricola (Wid.)—Hole of Horcum, 1938 (H.B.).

DRAPETISCA Menge

socialis (Sund.)—Hayburn Wyke, 1904 (W.F.) ; on tree trunks, Raincliffe Wood, 1913 (R.A.T.).

CENTROMERUS Dahl

bicolor (Blackw.)—"Widely diffused and stations numerous in all parts" (W.F., Nat., 1920, p. 21), but no specific records from the Scarborough district.

concinus (Thor)—Generally found with *C. bicolor*, but reaches to a greater height on the Yorkshire hills and is more abundant (W.F., Nat., 1920, p. 21) ; Ringing Keld Bog, 1913 (R.A.T.).

silvaticus (Blackw.)—Raincliffe Wood, f., 1914 (R.A.T.).

prudens (Cambr., O. P.)—Ravenscar, one f., 1904 (W.F.) ; Raincliffe Wood, f., 1914 (R.A.T.).

RHABDORIA Hull

diluta (Cambr., O. P.)—Ringing Keld Bog, one f., 1913 (R.A.T.) ; Scampston (W.F., Nat., 1920, p. 61).

MACRARGUS Dahl

rufus (Wid.)—Widespread ; many records.

OREONETIDES Strand

abnormis (Blackw.)—Local ; Scarborough, m. and f., 1913 (R.A.T.) ; Beastcliff (T.S., Nat., 1920, p. 21).

MENGEA Cambridge, F. O. P.

scopigera (Grube)—Ravenscar from heather, one m., 1904 (W.F.) ; Goathland, one f. (W.F., Nat., 1919, p. 403).

AGYNETA Hull

conigera (Cambr., O. P.)—Hayburn Wyke, 1904 (W.F.) ; Langdale End and Raincliffe Wood, 1914 (R.A.T.) ; Rillington, 1927 (W.F.).

cauta (Cambr., O. P.)—Rillington, f., 1927 (W.F.).

MICRONETA Menge

viaria (Blackw.)—Widespread ; many records.

MEIONETA Hull

saxatilis (Blackw.)—Scarborough and Ringing Keld Bog, 1913 (R.A.T.) ; Goathland and Rillington, 1927 (W.F.).

rurestris (Koch, C. L.)—Very widespread ; many records.

gulosa (Koch, L.)—Rare ; Ravenscar from heather, m. and f., 1904 (W.F.) ; near its southern limits in this country.

SINTULA Simon

cornigera (Blackw.)—Rare ; Ringing Keld Bog, three f., 1913 (R.A.T.) ; Hayburn Wyke, 1919 (T.S.).

SYEDRA Simon

pholcommoides (Cambr., O. P.)—Very rare ; Cornelian Bay from grass roots on the cliffs, one f., Aug., 1905 (W.F.).

PHALANGIDEA — HARVESTMEN

There are twenty British species, of which fifteen have been recorded in the Scarborough district. Genera have been re-arranged as a result of recent work by C. F. Roewer and other continental workers.

LEIOBUNUM Koch, C. L.

rotundum (Latr.)—Widespread and abundant ; many records.

blackwallii Meade—Rare ; Sleights, f., 1935 (H.B.).

PHALANGIUM Linnaeus

opilio L.—Many records, most plentiful on or near the coast.

OPILIO Herbst

parietinus De G.—Scarborough, 1913 (R.A.T.) ; Sleights, 1937 (H.B.).

PLATYBUNUS Koch, C. L.

triangularis (Herbst)—Widespread ; many records.

MEGABUNUS Meade

diadema (Fabr.)—Langdale End and Raincliffe Wood, 1914 (R.A.T.) ; Hole of Horcum, 1938 (H.B.).

MITOPUS Thor

morio (Fabr.)—Scarborough, 1913 (R.A.T.) ; Falling Foss, 1914 (W.P.W.) ; Hole of Horcum, Helwath Beck, 1937 (H.B.).

var. *alpinus* Herbst—Scarborough cliffs and Raincliffe Wood, 1913-14 (R.A.T.).

OLIGOLOPHUS Koch, C. L.

agrestis (Meade)—Scarborough and Ringing Keld Bog, 1913 (R.A.T.) ; Helwath Beck, m., 1932 (H.B.).

hansenii (Kraepel) — Rare ; Scarborough, North Bay, m., 1905 (W.F.).

tridens (Koch, C. L.)—Scarborough, Cloughton, etc., 1913 (R.A.T.) ; Hayburn Wyke, Falling Foss, etc., 1936-37 (H.B.).

ODIELLUS Roewer

palpinalis (Herbst)—Ringing Keld Bog and Oliver's Mount, 1913 (R.A.T.) ; Staintondale, Goathland, etc., 1936-37 (H.B.).

LACINIUS Thor

ephippiatus (Koch, C. L.)—Widespread ; many records.

NEMASTOMA Koch, C. L.

lugubre (Muell., O. F.)—Very common all over the district (R.A.T.).

chrysomelas (Herm.)—Levisham, 1905 (W.F.) ; Scarborough, Staintondale, Langdale End, etc., 1913-14 (R.A.T.).

CHELONETHIDA — PSEUDOSCORPIONS

Of the twenty-three species recorded in Britain, seven have been found in the Scarborough district. The nomenclature follows that used in M. Beier's "Pseudoscorpionidae," Das Tierreich, Berlin, 1932.

CHTHONIUS Koch, C. L.

ischocheles (Herm.) (= *C. rayi* Koch, L.)—Common.

tetrachelatus (Preyss.)—Common near the sea.

NEOBISIUM Leach

muscorum (Leach)—Numerous stations near Scarborough (G.B.W., W.F., R.A.T.).

LAMPROCHERNES Toemoesvary

nodosus (Schr.)—Falsgrave on legs of fly, 1913 (R.A.T.) ; Saltergate from refuse in cattle shed, 1937 (H.B.).

ALLOCHERNES (TOXOCHERNES) Beier

dubius (Cambr., O. P.)—Hayburn Wyke, one example, 1919 (T.S.).

PSELAPHOCHERNES Beier

scorpioides (Herm.)—Barns Cliff, Harwood Dale, 1934 (G.B.W.).

DACTYLOCHELIFER Beier

latreillei (Leach)—Flixton (G.B.W.).

ACARI — MITES and TICKS

The records of the Acari, with the possible exceptions of the Eriophyidae and Ixodidae, are very meagre. The nomenclature is as suggested by Mr. C. D. Radford and Mr. E. Browning of the British Museum of Natural History, to whom the compilers' sincere thanks are due.

In "Report on Forest Research," 1953, Dr. P. W. Murphy gives a list of fifty-three species of mites recorded from the natural heathland and forest plantings of the Allerston area. The list includes two species new to science, and two genera and five species new to Britain. Some of the raw humus at Allerston was found to contain more than a quarter of a million mites and collembola per square metre.

ERIOPHYIDAE — GALL MITES

Eriophyes pteridis Moll.—Fairly common on *Pteridium*.

E. tenuis (Nal.)—Scalby on *Dactylis glomerata* (W.F.).

E. psilaspis Nal.—Scampston on *Taxus* (W.F.).

E. tetanothrix (Nal.)—Widely distributed on *Salix cinerea*.

E. salicinus Nal. (= *E. salicis*)—Widely distributed on *Salix caprea*.

E. spec. Houard No. S. 53—Cornelian Bay, Scarborough Mere on *Salix fragilis* and *S. alba* (H.J.B.).

E. lionotus (Nal.)—Hayburn Wyke on *Betula* (H.J.B.).

E. rudis (Can.)—Big-Bud on *Betula*, common.

E. brevitaris (Fock.)—Bempton, Cayton Bay, Ellerburn on *Alnus* (H.J.B., W.F.).

E. laevis (Nal.)—Abundant on *Alnus*.

- E. nalepai* (Fock.)—Abundant on *Alnus*.
E. axillaris Schl.—Langdale End on *Alnus*, common (G.B.W.).
E. avellanae (Nal.)—Big-Bud on *Corylus*, common.
E. atrichus (Nal.)—Staintondale on *Stellaria graminea* (H.J.B.).
E. ribis (Westw.)—Big-Bud on *Ribes nigrum*, widespread and plentiful.
E. similis (Nal.)—Common on *Prunus spinosa*.
E. gibbosus (Nal.)—Beast Cliff on *Rubus plicatus* (H.J.B.).
E. piri (Pgst.)—Fairly common and generally distributed on *Sorbus*.
E. goniothorax (Nal.)—Common on *Crataegus*.
E. euaspis (Nal.)—Robin Hood's Bay on *Lotus corniculatus* (H.J.B.).
E. tiliae (Pgst.)—Hayburn Wyke on *Tilia*, abundant (G.B.W.).
 var. *liosoma* (Nal.)—Scarborough (G.B.W.).
E. piri typicus (Pgst.) (= *E. crataegi* Can.)—Common on *Crataegus* (W.F.).
E. macrorrhynchus (Nal.)—Hackness, Ellerburn on *Acer pseudoplatanus*, Pickering on *A. campestre* (H.J.B., R.M.B.).
E. spec. Houard No. 3976 or 3977.—Hayburn Wyke on *Acer pseudoplatanus* (H.J.B.).
E. empetri Lindr.—Common on *Empetrum*.
E. thomasi (Nal.)—Hackness on *Thymus serpyllum*, plentiful (W.F.).
E. galii (Karp.)—Scalla Moor, Ravenscar, Beast Cliff on *Galium aparine* (H.J.B.).
E. pilosellae (Nal.)—Troutdale, Fylingdales Moor on *Hieracium pilosella* (H.B.).
E. ulmi Nal.—Scampston on *Ulmus* (W.F.).
Phyllocoptes gymnaspiis Nal.—Staintondale on *Acer* (W.F.).
P. acericola Nal.—Staintondale on *Acer* (W.F.).
P. fraxini Nal.—Scarborough on *Fraxinus* (G.B.W.).
P. epiphyllum Nal.—Scampston on *Fraxinus* (W.F.).
Epitrimerus trilobus (Nal.)—Scarborough on *Sambucus* (J.M.B.).
E. salicobius (Nal.)—Raincliffe Wood on *Salix* sp. (G.B.W.).

DEMODICIDAE

Demodex folliculorum Sim.—Common and generally distributed.

ORIBATIDAE --- BEETLE MITES

- Belba clavipes* (Herm.)—Ringing Keld Bog, 1913 (R.A.T.) ; Seamer Moor, 1920 (G.B.W.).
B. geniculosa Oud.—Ringing Keld Bog, 1913 (R.A.T.) ; Staintondale, 1914 (W.P.W.).
Hydrozetes lacustris (Mich.)—Cayton Bay pond, abundant, 1914 (R.A.T.) ; Seamer Moor, 1933 (G.B.W.).

THROMBIDIIDAE — EARTH MITES

- Allothrombium fuliginosum* (Herm.)—Fairly numerous, Raincliffe Wood and Oliver's Mount, etc., 1913 (R.A.T.). British examples appear to be var. *norvegicum* Berl. (J.E.H.).
Anystis baccharum L.—The ubiquitous Red Spider.
Bdella vulgaris Herm.—Grosmont, 1936 (A.E.B.).

Calypstostoma expalpis (Herm.)—Robin Hood's Bay and Hackness, 1914 (R.A.T.).

Myobia musculi (Schrank)—Goathland, 1935 (R.J.F.).

Myocoptes musculus Koch—Goathland, on bank-vole, 1936 (R.J.F.).

Radfordia multivaga (Poppe)—Goathland on bank-vole, 1936 (R.J.F.).

Ritteria nemorum Koch—Widely distributed; many records.

Trombidium holosericeum (L.)—Plentiful in the district. The first printed record of a mite probably refers to this species. It was included in Martin Lister's "*Araneorum Angliae*," 1678, as a Two-eyed Spider. "I have noticed them in very great numbers near the sea-shore at Scarborough. Our herdsmen look upon them as creatures very much to be dreaded, indeed it is considered certain death to oxen if by chance they are eaten by them in the grass."

PARASITIDAE (=GAMASIDAE)

Amblysius obtusus Kr.—Beckhole, 1936 (H.B.).

Dermanyssus gallinae De G.—Red Mite. Common on poultry and cage birds.

Euhaemogamasus horridus (Mich.)—Abundant in moles' nests all over the district (G.B.W.).

Eulaelaps stabularis (Koch)—Goathland, 1935 (H.B.).

Euryparasitus emarginatus Koch—Goathland, 1935 (R.J.F.).

E. terribilis (Mich.)—Abundant in moles' nests all over the district (G.B.W.).

Haemogamasus nidi Mich.—Goathland, 1935 (R.J.F.).

Laelaps festivus Koch—Goathland, 1935 (R.J.F.).

Lasioseius plumosus Oud.—Beckhole, 1936 (H.B.).

Leiodinychus kramerii Can.—Probably common (W.F.).

Liponyssus macedonicus Hirst—Goathland, 1935 (R.J.F.).

Parasitus coleoptratorum (L.)—Very common on manure, etc. (W.F.).

Pergamasus crassipes L.—Common everywhere (W.F.).

IXODIDAE — TICKS

Argas reflexus Fabr.—Flamborough, on rock-dove, 1920 (G.B.W.).

A. vespertilionis Latr.—Scarborough, larval form on pipistrelle, 1925 (G.B.W.).

Hyalomma syriacum Koch—Scarborough, introduced species on imported tortoise (G.B.W.).

Ixodes caledonicus Nutt.—Scarborough on jackdaw, upwards of 300 found on upper part of head, caused death of bird (G.B.W.).

I. hexagonus Leach—Ruston on hedge-hog (G.B.W.).

I. ricinus L.—Littlebeck, 1910 (G.B.W.); Falling Foss, 1936 (H.B.); Scarborough (G.B.W.).

I. trianguliceps Bir.—Beckhole, 1936 (H.B.).

I. uriae White (= *I. putus* Cambr., O. P.)—Flamborough on migratory sea-birds (W. C. Hewitt, 1902; O. Brabham, 1908; E. G. Wheeler, 1906).

SARCOPTIDAE — MANGE or SCABIES MITES TARSONEMIDAE

- Ctenoglyphus canestrinii* Arm.—Beckhole, 1936 (H.B.).
Oudemansium domesticus (De G.)—Goathland, 1935 (R.J.F.).
Sarcoptes scabiei L.—Endemic and epidemic.
Acarapis woodi (Rennie) (= *Tarsonemus*)—The cause of Acarine disease among bees. Very common and destructive at one time but more under control now.

HYDRACHNIDAE — FRESH-WATER MITES

- Acerus latipes* (Muell.)—Cayton Bay pond, 1913 (R.A.T.).
Brachypoda versicolor (Muell.)—Common (C. D. Soar) but no localities given.
Hydryphantes ruber De G.—Cayton Bay pond, abundant, 1913 (R.A.T.).
Hygrobatas longipalpis (Herm.)—Cayton Bay pond, m., 1913 (R.A.T.) ; Oliver's Mount, in horse trough (W.F.).
Megaluracarus caudatus (De G.)—Cayton Bay pond, 1912 (R.A.T.).
Micruracarus bifidicodulus (Piers.)—Cayton Bay pond, f., 1913 (R.A.T.).
M. integrator Muell.—Cayton Bay pond, m., 1913 (R.A.T.).
Neumannia spinipes (Muell.)—Seamer Moor pond, f., 1913 (R.A.T.).
N. vernalis (Muell.)—Seamer Moor pond, m., 1912 (R.A.T.).
Piona conglobata (Koch)—Seamer Moor pond, f., 1913 (R.A.T.).
P. nodata (Muell.)—Cayton Bay pond, abundant, 1912 (R.A.T.).
Pionopsis lutescens (Herm.)—Cayton Bay pond, m., 1912 (R.A.T.).

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LAND AND FRESH WATER MOLLUSCA

E. Arnold Wallis and Athol J. Wallis

Class GASTROPODA and Class BIVALVIA

[Note : Mr E. A. Wallis, some time before his sudden death, had been in correspondence with me over the question of nomenclature, and I had suggested using that adopted in the recent Census of the British Non-Marine Mollusca (Journ. Conch. xxiii, 1951, pp. 171-244). Even if one does not agree with all the details, the advantages of using a "standard" printed list are obvious. Mr. Wallis agreed with this, and asked me to recast the list, bringing names and arrangement into conformity with those of the Census. This I have done, but credit for the following list is entirely due to Mr. E. A. Wallis, and after his death Mr. A. J. Wallis, who did all the laborious work of collating records and searching literature. I have added a few notes on species only recently recognised.

—Nora Fisher McMillan.]

The land and fresh water mollusca of the Scarborough district were well worked during the middle of the last century by the great conchologist William Bean and by Leckenby and others. Unfortunately the only records now available of the work of these early pioneers is a list of names in Theakstone's "Guide to Scarborough", 1858. This list includes several species such as *Clausilia biplicata*, *Paludina listeri*, *Cyclas rivicola* and *Helix lapicida*, none of which occurs within many miles of Scarborough, and it is evident that Bean gave the name Scarborough a very wide signification, and his list cannot be relied upon as an indication of what now occurs within the confines of the district.

The present list of the non-marine mollusca is compiled from the work done during the life of the Society by the conchologists who have thoroughly explored the district—W. Gyngell, J. A. Hargreaves, A. Harman, Rev. W. C. Hey, E. A. Wallis and others.

A list of the local non-marine mollusca was compiled by J. A. Hargreaves and published in 1909 (Journ. Conch., xii, pp. 299-308), and this list forms the basis of the present records which contain only a few additions.

The district is rich in the land and fresh water shells. As might be expected the higher parts of the Tabular Hills and the Moorland area are deficient in molluscan life. Here the only land mollusc that is commonly found is the black slug *Arion ater* (L.). The sour, peaty soil with its thick covering of ling and bracken is not suited to the requirements of snails; but on many of the older walls along the edges of the Moors a few species, such as *Balea perversa* (L.) and *Lauria cylindracea* (da Costa) are to be found, though their distribution is very discontinuous. One of the few localities from which *Zonitoides excavatus* (Alder) has been recorded is the foot of a dry

wall on the top of the hills on the western side of Hackness Valley. This species has not so far been found on the Wolds.

Forge Valley which cuts through the middle oolites, though small in area, is extremely rich in molluscan life and several species are found there which have not been recorded from other parts of the district. The Castle Hill and parts of the cliffs both north and south of the town have a varied molluscan fauna, though northwards this condition gradually changes, and generally speaking the whole district to the north is relatively deficient in snail life. Observation indicates that among the land shells found along the cliffs and near the shore a higher percentage of individual shells have the epidermis either very much eroded or absent than is the case with specimens of the same species found further inland. This is particularly noticable in the larger *Helices*.

Changes in the land mollusca have occurred in recent years. It would seem that the alteration of drainage due to the widening and surfacing of the roads with tar-mac, and the extension of the town in all directions have had an effect on the habitats of many species, none of which are now to be found in places where they were once very abundant. *Arianta arbustorum* (L.) was, thirty years ago, very abundant on the Castle Hill, but has markedly declined in this locality where it is now relatively scarce. *Pomatias elegans* (Muell.), formerly common on both sides of the river in Forge Valley, seems to be disappearing, and no living specimens have been observed for many years. It may be lingering on, though certainly in much reduced numbers.

On the other hand *Trichia striolata* (Pfeiff., C.) (= *Hygromia rufescens* Penn.) which used to be very local though common where it occurred, is now extremely abundant all over the town, and has extended its range into many parts where it was formerly rare and non-existent; and the same is true of *Monacha cantiana* (Mont.).

The most recent addition to the records is *Potamopyrgus* (= *Hydrobia*) *jenkinsi* (Smith). It was first recorded from a watercress bed at Pickering in 1938, at the western side of the district under review. It was not recorded in the immediate neighbourhood of Scarborough until 1944, and in 1946 specimens were found at Folkton, again in watercress beds. It would appear doubtful if any connection can be traced between these two localities, for although the later records are from a habitat nearer the sea, the peculiar features of the district give a westerly drainage flow to the Vale of Pickering. Since 1946 the species has made a remarkable spread, and is now abundant in the R. Derwent and R. Hertford. It is, however, certainly a recent comer into the district.

Our grateful thanks are due to Mrs. N. F. McMillan without whose help this list could not have been produced in such an accurate and complete form. She has willingly spent much time in recasting the list to bring it into line with present day nomenclature, and in reading through the manuscript and proofs.

Thanks are also due to Mr. A. W. Stelfox who kindly determined material collected by A. J. Wallis in 1954.

The classification and nomenclature used are those of the recent Census of the Distribution of British Non-Marine Mollusca (Journ. Conch., xxiii, 1951, pp. 171-244). Varietal names have, in the main, been taken from the list of British Non-Marine Mollusca prepared by B. B. Woodward in 1904.

The following contractions are used :—

H.B.—H. Britten	E.M.M.—Mrs. E. M. Morehouse
T.C.—T. Castle	A.E.P.—A. E. Peck
W.J.C.—W. J. Clarke	W.D.R.—W. D. Roebuck
J.E.C.—J. E. Crowther	A.S.—A. Smith
A.E.E.—A. E. Ellis	A.W.S.—A. W. Stelfox
G.F.—Greevz Fysher	C.F.S.—C. F. Sweetman
W.G.—W. Gyngell	A.J.W.—A. J. Wallis
J.A.H.—J. A. Hargreaves	E.A.W.—E. A. Wallis
A.H.—A. Harman	Nat.—The Naturalist
W.C.H.—Rev. W. C. Hey	Journ. Conch.—The Journal of Conchology

Class GASTROPODA

Order ARCHAEOGASTROPODA

NERITIDAE

THEODOXUS Montfort

fluviatilis (L.)—Rare. R. Derwent (J.A.H.) ; Brompton (W.G.).

Order MESOGASTROPODA

VIVIPARIDAE

VIVIPARUS Montfort

viviparus (L.)—Specimens from York were introduced into the Valley pond in 1909 ; nothing has been seen of them since (E.A.W.).

fasciatus (Muell.)—Specimens from near Askern were introduced into a pond in Cayton Bay in 1903 (J.A.H.) ; they were still flourishing in 1952 (E.A.W.). The pond was drained in 1953.

VALVATIDAE

VALVATA Mueller

cristata (Muell.)—Not common and local. R. Derwent at Ayton (J.A.H.) ; ditch near Seamer.

piscinalis (Muell.)—Common in R. Derwent ; rare in ditches on the Carrs. Stream near Brompton, 1954 (A.J.W.).

POMATIIDAE

POMATIAS Studer

elegans (Muell.)—Formerly on Oliver's Mount (J.A.H.) ; now only in Forge Valley, but much less common than formerly, last record of living specimens in 1944 (E.M.M., Nat., 1945, p. 30).

ACMIDAE

ACME Hartmann

fusca (Mont.)—Very local. Not uncommon in Forge Valley ; rare in Yedmandale ; one record Beast Cliff (A. J. Moore, Nat., 1911, p. 108).

HYDROBIIDAE

POTAMOPYRGUS Stimpson

jenkinsi (Smith)—First recorded in the district at Pickering watercress beds (E.M.M., Nat., 1938, p. 237). In the immediate Scarborough area first records are R. Derwent, West Ayton, 1944 (W. Thurgood, Nat., 1945, p. 29), and in watercress at Folkton, 1946 (Dr. M. Ealing). These records indicate that its first appearance was some time prior to 1944. Since that time the species has spread rapidly and is now abundant in R. Hertford and R. Derwent (E.A.W.).

var. **carinata** Marshall—Occurs commonly with the type (A.J.W.).

BITHYNIA Leach

tentaculata (L.)—Abundant on the Carrs ; formerly in the Mere but now extinct ; extremely abundant in Hackness Lake, being almost the only living mollusc, 1952 (E.A.W.).

leachii (Shepp.)—One record, Ellerburn, Thornton-de-Dale, with previous species (G.F., Nat., 1922, p. 296).

Order BASOMMATOPHORA

ELLOBIIDAE

CARYCHIUM Mueller

minimum Muell. (agg.)—Common in woods among moss and dead wood. Both segregates into which *Carychium* has now been separated (*C. minimum* s.s. and *C. tridentatum* (Risso)) have been recorded from v.c. 62 (York N.E.) and probably occur in the Scarborough district, but have not yet been definitely identified.

LEUCOPHYTIA Winckworth

bidentata (Mont.)—Said to have lived on the piers many years ago but cannot now be found ; dead shell found on the shore in 1908 had probably drifted down the coast (J.A.H.).

LYMNÆIDAE

LYMNÆA Lamarck

truncatula (Muell.)—Local. Occurs on and near the coast from Ravenscar to Flamborough in ponds, marshes and streams and occasionally in drinking troughs (J.A.H.) ; is less frequently found inland.

glabra (Muell.)—Rare. A decollate form has persisted for many years in a small marsh in Lady Edith's Drive ; the marsh is frequently dry and all the shells are small. Formerly in a pond in Cayton Bay, now extinct. Langdale End (J.A.H.) ; Harwood Dale (E.A.W.) ; Kingthorpe Woods, 1929 (G.F., Nat., 1929, p. 345). A sinistral specimen was found in Lady Edith's Drive (H. Beeston, Journ. Conch., xii, 1908, p. 191).

- palustris** (Muell.)—Very common and widely distributed.
 var. **elongata** Moq.-Tand.—Seamer Carrs (J.A.H.).
 var. **conica** Jeffer.—Seamer Carrs (J.A.H.).
 var. **roseolabiata** Jeffer.—Occurs commonly with type (J.A.H.).
stagnalis (L.)—Not common. Formerly in the Mere; occurs in Cayton Bay and sparingly on the Carrs.
 var. **fragilis** L.—Pond on Filey Road, now drained (J.A.H.).
auricularia (L.)—Not common. Local shells are usually small.
 var. **acuta** (Jeffer.)—Hackness Lake (J.A.H.); R. Derwent, Ayton (W.C.H., Nat., 1892, p. 368).
peregra (Muell.)—Very abundant and generally distributed. Variable in form and condition. Large numbers have been introduced into the Mere and R. Derwent to provide food for fish. Sinistral specimens were found in a small pond near Hackness. In 1923 sinistral specimens from a pond near Leeds were introduced into a pond near Cayton Station; it is not known whether they survived (W.G.).
 var. **ovata** Drap.—Pickering Beck (W.D.R., Nat., 1886, p. 273).
 var. **succineiformis** Jeffer.—In a ditch on Thorn Park (E.A.W.).
glutinosa (Muell.)—Specimens in Scarborough Museum are said to have been taken in the Valley; no trace can now be found.

PHYSIDAE

APLEXA Fleming

- hypnorum** (L.)—Abundant on the Carrs (J.A.H.); Throxenby Mere, specimens small in size (E.A.W.).

PHYSA Draparnaud

- fontinalis** (L.)—Common on the Carrs.

PLANORBIDAE

PLANORBARIUS Frieriep

- corneus** (L.)—Not common. Introduced into a pond on Seamer Moor and Throxenby Mere, 1906; has since increased and is now abundant, especially in the former locality (E.A.W.).

PLANORBIS Mueller

- carinatus** (Muell.)—Not common. Formerly abundant in the Mere, now extinct; sparingly on the Carrs.
 var. **disciformis** Jeffer.—Formerly in Scarborough Mere (J.A.H.).
planorbis (L.)—Fairly common on the Carrs. Fen Bog, Newton Dale, 1937 (H. Britten).
vortex (L.)—Rare. Scalby Cut (J.A.H.); Filey (T.C., Nat., 1914, p. 255); Kingthorpe Woods (G.F., Nat., 1929, p. 345).
leucostoma Mill. (= **spirorbis** (L.))—Very abundant. Large numbers of scalariform specimens were taken in Cayton Bay some years ago, but they have now disappeared (J.A.H.).
laevis Ald.—Rare. Occurred only in a pond at Suffield, where it was abundant on **Elodea canadensis**, but a careful search in 1920 resulted in no specimens being found (E.A.W.). No recent records.
albus (Muell.)—Widely distributed but not common.

crista (L.)—Widely distributed. Often abundant where found.
 var. **laevigata** Adami—Scarborough Mere (J.A.H.) ; Dane's Dyke Pond, about one to five of type (J.E.C., Nat., 1906, p. 245).

contortus (L.)—Abundant and widely distributed.

SEGMENTINA Fleming

complanata (L.) (= **Pl. fontanus** Lightf.)—Rare. In ponds between Cayton and Lebberston (J.A.H., E.A.W.) ; Ellerburn, Thornton-le-Dale (G.F., Nat., 1922, p. 296).

ANCYLIDAE

ACROLOXUS Beck

lacustris (L.)—Fairly common and widely distributed.

ANCYLUS Mueller

fluviatilis (Muell.)—Common in most of the becks where conditions are suitable.

var. **albida** Jeffr.—Scalby Beck (A.H.).

Order STYLOMMATOPHORA

SUCCINEIDAE

SUCCINEA Draparnaud

putris (L.)—Early records are open to doubt as to identification, but has been recently recorded from Forge Valley, where an unusually dark form was taken (E.M.M., Nat., 1945, p. 30).

pfeifferi Rossm.—Probably early records of **S. elegans** refer to this species. Authenticated records are from rocks just above high water mark at Thornwick Bay (A.E.E.) ; pond in Cornelian Bay (E.A.W. *det* A.E.E.) ; Jackson's Bay (E.A.W.).

elegans Risso—Records of this species are open to doubt and cannot be included in this list.

COCHLICOPIDAE

AZECA Fleming

goodalli (Fér.)—Rare. Occurs only in Forge Valley.

COCHLICOPA Férussac

lubrica (Muell.)—Common and generally distributed. The closely allied species **C. minima** (Siem.) is also widely spread in the British Isles and no doubt occurs in the Scarborough area though it has not so far been recorded. Quick (Proc. Malac. Soc., xxx, 1954, pp. 204-213) gives an excellent account—with figs.—of the two species and points out that the correct name for **C. minima** appears to be **lubricella** (Porro).

VERTIGINIDAE

COLUMELLA Westerlund

edentula (Drap.)—Common. Occurs on **Lastraea**, **Iris**, **Carex pendula**, **Spiraea**, etc.

VERTIGO Mueller

pusilla (Muell.)—Very rare. One locality, a wall near Ayton Castle (W.C.H.), although the last records from there are in 1923 (W.G.).

antivertigo (Drap.)—Not common. Formerly abundant in a bog on the Castle Hill, before it was drained (J.A.H.); also recorded from Forge Valley and Throxenby Mere (J.A.H.).

substriata (Jeffer.)—Not common.

pygmaea (Drap.)—In 1896 in great abundance in Forge Valley. Not common now but widely distributed.

PUPILLA Fleming

muscorum (L.)—Fairly common.

LAURIA Gray

cylindracea (da Costa)—Generally distributed and often exceedingly abundant.

var. **edentula** Gray—Suffield (J.A.H.).

anglica (Wood)—Not common, but widely distributed. Forge Valley, Scarborough South Cliff, Filey, Speeton (J.A.H.); Flamborough Head (W.C.H., Nat., 1902, p. 271); Hole of Horcum (C.F.S., Nat., 1938, p. 311). Usual habitat is moss with water slowly trickling through it.

VALLONIIDAE

ACANTHINULA Beck

aculeata (Muell.)—Not common but widely distributed.

lamellata (Jeffer.)—Not common and sparingly distributed. Yedman-dale, Forge Valley, Hayburn Wyke. Usually on dead holly and beech leaves.

VALLONIA Risso

costata (Muell.)—Widely distributed. More common at foot of Wolds than **V. pulchella** (A.H.).

pulchella (Muell.)—Fairly common and widely distributed.

exentrica Sterki—Rare. Ayton Road (J.A.H.).

ENIDAE

ENA Turton

obscura (Muell.)—Fairly common and widely distributed.

CLAUSILIIDAE

MARPESSA Gray

laminata (Mont.)—Fairly common and widely distributed.

CLAUSILIA Draparnaud

bidentata (Stroem)—Common and generally distributed.

BALEA Gray

perversa (L.)—Widely distributed; locally abundant.

FERUSSACIIDAE

CECILIOIDES Férussac

acicula (Muell.)—Local and not common. Castle Hill, Irton, Cayton Bay, Folkton.

TESTACELLIDAE

TESTACELLA Draparnaud

maugei Fér.—Rare. In a garden on South Cliff, 1900, probably introduced with plants (J.A.H.).

haliotidea Drap.—Rare. All records are from the South Cliff, Scarborough, the most recent being one in Holbeck Gardens, -/3/52 (E.A.W. *det.* A.S.).

scutulum Sow.—Formerly very abundant in Walshaw's Nursery Gardens where it was known for fifty years. Has been recorded from other parts of the town, and at Scalby.

HELICIDAE

HELICOGONA Férussac

lapicida (L.)—Specimens in the Scarborough Museum are marked 'Scarborough', but none have been found within the district and the exact locality where these were taken is not known. A few specimens were found at Appleton-le-Moors, six miles outside the district, in August, 1947 (E.A.W.).

ARIANTA Turton

arbustorum (L.)—Generally distributed and common. Formerly abundant on the Castle Hill, but has markedly declined in recent years.

var. **alpestris** Zieg.—Castle Hill (J.A.H.).

var. **fusca** Fér.—Castle Hill (J.A.H.).

var. **fuscescens** Dum. & Mort.—Rare. Castle Hill (J.A.H.); Scalby Road (A.H.); Farwath Bridge, Newton Dale (W.D.R., Nat., 1886, p. 273).

var. **cincta** Tayl.—Cliffs north and south of Scarborough (J.A.H.); Fyling Hall (G.F., Nat., 1924, p. 273).

var. **flavescens** Moq.-Tand.—Castle Hill, Scalby Road and Spa Gardens (J.A.H.).

THEBA Risso

pisana (Muell.)—In 1916 living specimens were turned down near Scalby Mills; nothing has been seen of them since (J.A.H.).

HELIX Linnaeus

hortensis (Muell.)—Generally distributed. More common than *H. nemoralis* except on the cliffs and has disappeared from many roadside localities where formerly abundant.

var. **roseolabiata** Tayl.—Scarborough (J.A.H.); Bempton Cliffs (J.E.C., Nat., 1906, p. 245).

var. **fuscolabiata** Von Mart.—Fairly common.

var. **albina** Moq.-Tand.—Rare. Castle Hill.

var. **lutea** Moq.-Tand.—Common.

var. **olivacea** Tayl.—Fairly common and widely distributed.

var. **arenicola** MacGill.—Ruston, Cayton Bay, Castle Hill, Lebberston (E.A.W.).

var. **citrinazonata** Tayl.—Scarborough, 1948 and 1950 (E.A.W.).

var. **quinquevittata** Moq.-Tand.—Pickering (G. F., Nat., 1929, p. 345).

nemoralis L.—Well distributed throughout the district, but generally more abundant on the cliffs than inland. Now rare or absent in many roadside localities where formerly abundant. Out of 70

specimens taken from a chalk-pit at Binnington, five weighed .02 oz. and one .12 oz., or six times the weight of the lightest (W.G.).

var. *compressa* Terv.—Ganton (W.G.).

var. *ponderosa* Malm.—Binnington (W.G.).

var. *albolabiata* Von Mart.—Binnington, Flixton.

var. *rubella* Moq.-Tand.—Filey (T.C., Nat., 1914, p. 255).

var. *libellula* Risso—Fairly common.

var. *olivacea* Risso—Pickering watercress beds (E.M.M., Nat., 1938, p. 237).

var. *roseozonata* Cock.—Rare. Castle Hill, Cayton Bay, Allerston (W.G.).

var. *hyalozonata* Tayl.—Rare. Castle Hill, Folkton (W.G.).

var. *citrinozonata* Cock.—Rare. Records from Castle Hill only (E.A.W., E.M.M.).

var. *undulata* Gent.—Fairly common but very local.

var. *carnea* Baud.—Pickering watercress beds (E.M.M., Nat., 1938, p. 237).

var. *quinquefasciata* Moq.-Tand.—Pickering and Scarborough Race Course (G.F., Nat., 1929, p. 345-6).

aspersa (Muell.)—Abundant in many localities, and generally distributed. This shell is sometimes gathered by fishermen for bait (J.A.H.).

var. *conoidea* Pic.—Castle Hill (J.A.H.).

var. *tenuior* Shuttlew.—Scarborough (J.A.H.).

var. *nigrescens* Moq.-Tand.—Castle Hill (J.A.H.).

var. *undulata* Moq.-Tand.—Castle Hill (J.A.H.).

var. *zonata* Moq.-Tand.—Castle Hill (J.A.H.).

var. *exalbida* Menke—Peasholm (A.H.) ; Castle Hill ; Ayton Road, locality now destroyed.

var. *lutescens* Tayl.—Colony found on roadside near Hutton Buscel in 1909 (W.G.). Specimens still present in 1948 (E.A.W.).

pomatia L.—In 1868 an attempt was made to introduce this species into Forge Valley. No living specimens have been found for many years and it is not known how long they persisted. A dead shell was found in 1907 (W.G.).

HYGROMIA Risso

subrufescens (Miller)—Very common in Forge Valley and occurs in several other parts of the district.

var. *vitrea* Fér.—Forge Valley (J.A.H.).

striolata (Pfeiff., C.) (= *H. rufescens* Penn.)—Formerly very local but common where it occurred. Now the dominant species in and around the town has extended its range in the surrounding country and is now very abundant and generally distributed.

var. *rubens* Moq.-Tand.—Scalby (J.A.H.) ; Hackness (G.F., Nat., 1925, p. 343).

var. *albocincta* Cock.—Common with type (E.A.W.).

var. *alba* Moq.-Tand.—Suffield, Scarborough (E.A.W.) ; Hackness (G.F., Nat., 1925, p. 343).

*hispid*a (L.)—Common and generally distributed. A sinistral specimen taken in Holbeck Gardens, Scarborough, 1/8/52 (E.A.W., Nat., 1953, p. 26).

var. *hispidosa* Mouss.—Less common than type but generally distributed (J.A.H.).

var. *depilata* Ald.—Forge Valley, Yedmandale, Red Cliff, Castle Hill.

var. *subrufa* Moq.-Tand.—Almost as common as type (J.A.H.).

var. *albida* Jeffer.—Castle Hill, Burniston, Forge Valley (J.A.H.).

MONACHA Fitzinger

granulata (Ald.)—Abundant in Forge Valley ; less common in other places.

cantiana (Mont.)—In 1908 J. A. Hargreaves recorded it as common where it occurs, but confined to the south and west of the town, while W. Gyngell considered it the dominant species on the Wolds, except for the northern slopes. In recent years it has made a very marked spread in its range the following records illustrating this spread, the dates referring to the first year in which it was noticed in each locality. 1948, corner of Stepney Drive and Scalby Road, Scarborough ; 1952, fairly common Coldy Hill Lane, Newby ; 1953, near Lindhead, Burniston (E.A.W.). 1948, between Osgodby Hill Top and Cayton and at Crossgates ; 1949, near Seamer Station ; 1952, extremely abundant between Eastfield and Cayton ; 1953, common on the road from Cayton to Folkton (E.A.W.).

var. *albida* Tayl.—Musham Bank (J.A.H.) ; Seamer Mere (E.A.W.) ; Lindhead, Burniston (E.A.W.).

HELICELLA Férussac

caperata (Mont.)—Generally distributed ; variable in colour and markings. A sinistral specimen taken in Ayton Quarry (W.G.).

var. *subscalaris* Jeffer.—Not common. Osgodby (J.A.H.).

var. *bizonalis* Moq.-Tand.—Rare. Forge Valley (J.A.H.).

var. *ornata* Pic.—Occurs with other forms in a few localities.

var. *fulva* Moq.-Tand.—Fairly common.

var. *lutescens* Pasc.—Fairly common. Occurs with type (J.A.H.).

var. *alba* Pic.—Rare. Forge Valley (J.A.H.).

gigaxi (Pfeiff., L.)—Rare. Recorded from an old chalk pit at Willerby Wold, 1912 (W.G.) ; Ayton Road, 1914 (J.A.H.).

virgata (da Costa)—Extremely abundant and generally distributed. Varies enormously in colour, size and markings. Four sinistral specimens have been taken, the most recent one on Oliver's Mount, Scarborough, 1/9/52 (E.A.W., Nat., 1953, p. 26).

var. *depressa* Requ.—Near Ayton (J.A.H.).

var. *lineata* Olivi—Common.

var. *leucozona* Tayl.—Seamer, Cross Gates Quarry (E.A.W.).

- var. **rufulozonata** Tayl.—Near Seamer (J.A.H.).
- var. **maculata** Moq.-Tand.—Not uncommon.
- var. **radiata** Hid.—Ayton Road (J.A.H.) ; Castle Hill (E.A.W.).
- var. **nigrescens** Grat.—Rare. Forge Valley (J.A.H.) ; Woodland Cemetery, Scarborough, 12/9/52 (E.A.W.) ; a beautiful dark violet form occurs in Cross Gates Quarry near Seamer (E.A.W.).
- var. **lutescens** Moq.-Tand.—Very common.
- var. **subalbida** Poir.—Common.
- var. **albicans** Grat.—Common.
- var. **hyalozona** Tayl.—Rare. Occurs in widely separated places associated with other forms. Specimens in which the banding is only partially transparent from Castle Hill, 1949 (E.A.W.).
- itala** (L.)—Widely distributed ; abundant where it occurs.
- var. **leucozona** Moq.-Tand.—Rare. Castle Hill (J.A.H.).
- var. **hyalozonata** Cock.—Rare. Castle Hill (J.A.H.).
- var. **alba** Charp.—Rare. Castle Hill (J.A.H.).

ENDODONTIDAE

PUNCTUM Morse

- pygmaeum** (Drap.)—Widely distributed and at times abundant.

DISCUS Fitzinger

- rotundatus** (Muell.)—Extremely abundant all over the district.
- var. **turtoni** Flem.—Forge Valley (J.A.H.).
- var. **albus** Moq.-Tand.—Fairly common and widely distributed.

ARIONIDAE

ARION Férussac

- intermedius** Norm.—Not common. Harwood Dale, Seamer Moor, Hayburn Wyke (J.A.H.) ; Filey (J.E.C., Nat., 1903, p. 245).
- circumscriptus** Johnst.—Local, but common where it occurs. Majority of records are from the coastal regions of the district.
- hortensis** Fér.—Very abundant.
- var. **nigra** Moq.-Tand.—Scarborough Spa Gardens (E.M.M., Nat., 1943, p. 121).
- subfuscus** (Drap.)—Not common. Hayburn Wyke, 1894 (W.D.R.) ; Filey, 1903 (J.E.C.) ; Harwood Dale, 1904 (Nat., 1904, p. 182) ; Robin Hood's Bay, 1933 (E.M.M.).
- ater** (L.)—Abundant throughout the district and occurs in the moorland areas where it is the only mollusc. Variable.
- var. **rufa** L.—Langdale End (J.A.H.).
- var. **brunnea** Roeb.—Scarborough, 1913 (W.J.C.) ; Hutton Buscel, 1914 (W.G.) ; Pickering, 1929 (G.F.) ; Scarborough (E.M.M., Nat., 1943, p. 121).
- var. **plumbea** Roeb.—Newtondale (W.D.R., Nat., 1886, p. 273).
- var. **bicolor** Roeb.—Scarborough (E.M.M., Nat., 1943, p. 121).
- var. **alba** L.—Hutton Buscel, 1914 (W.G.) ; Hackness, 1921 (A.E.P.).
- var. **aterrima** Tayl.—Scarborough, Forge Valley (E.M.M., Nat., 1943, p. 121).

- var. **castanea** Dum. & Mort.—Ramsdale Woods, 1888 (W.D.R.) ; Hole of Horcum, 1937 (H.B.).
- var. **albolateralis** Roeb.—Bempton and Flamborough, found sparingly (J.E.C., Nat., 1906, p. 245).
- var. **nigrescens** Raz.—Flamborough, 1 specimen (W.D.R., Nat., 1906, p. 245).
- var. **succinea** Muell.—Newtondale (W.D.R., Nat., 1886, p. 273).

All the above records refer to the aggregate only. No specimens of **A. rufus** (L.) have yet been determined, as it is only separable from **A. ater** (s.s.) by anatomy and the only specimen so far authenticated proved to be **A. ater** (L.) var. **castanea** Dum. & Mort. taken in Raincliffe Woods, 1954 (Dr. H. E. Quick *in litt.*).

ZONITIDAE

EUCONULUS Reinhardt

fulvus (Muell.)—Common and widely distributed.

var. **alderi** Gray—Raincliffe Woods, Forge Valley (J.A.H.).

VITREA Fitzinger

crystallina (Muell.)—Common

OXYCHILUS Fitzinger

drapernaldi (Beck)—Not common. Probably introduced with plants as most of the records are from public gardens (E.A.W.).

cellarius (Muell.)—Common and generally distributed.

var. **albina** Moq.-Tand.—One specimen Forge Valley (W.G.).

alliarius (Miller)—Common and generally distributed.

var. **viridula** Jeffr.—Fairly common, Forge Valley.

helveticus (Blum)—Not common. May have been introduced with plants (E.M.M., Nat., 1943, p. 121)

RETINELLA Fischer

radiatula (Ald.)—Rare. Sparingly distributed.

var. **viridescens-alba** Jeffr.—Hayburn Wyke, 1901 (J.A.H.).

pura (Ald.)—Common.

var. **nitidosa** Gray—Forge Valley, Suffield (J.A.H.) ; Raincliffe Woods (E.A.W.).

var. **margaritacea** Jeffr.—Pickering Castle (W.D.R., Nat., 1886,

nitidula (Drap.)—Very common.

p. 273).

var. **nitens** Mich.—Forge Valley (J.A.H.).

ZONITOIDES Lehmann

excavatus (Ald.)—Rare. Occurs in a few widely separated localities, e.g. Hayburn Wyke (J.A.H.) ; Spikers Hill, Forge Valley (E.A.W.) ; Hole of Horcum, 4/4/38 (C.F.S., Nat., 1938, p. 311). Has not been recorded from the Wolds, as this is the only British molluscan calcifuge (Boycott).

nitidus (Muell.)—Not common. Formerly in a bog on Castle Hill, but now probably extinct (J.A.H.) ; dry ditch at Folkton, 1918 (W.G.) ; Hole of Horcum, 1938 (C.F.S.) ; Raincliffe Woods, 1943 (E.M.M.).

VITRINIDAE

VITRINA Draparnaud

pellucida (Muell.)—Abundant and generally distributed.

LIMACIDAE

MILAX Gray

gagates (Drap.)—One record, a specimen in Bempton Village (J.E.C., Nat., 1906, p. 245).

sowerbyi (Fér.)—Common.

var. *nigrescens* Roeb.—Castle Hill, 1912 (J.A.H.).

LIMAX Linnaeus

maximus L.—Common and widely distributed.

var. *ferrussaci* Moq.-Tand.—Scarborough (J.A.H.).

var. *cellaria* D'Arg.—Newtondale (W.D.R., Nat., 1886, p. 273).

var. *obscura* Moq.-Tand.—Oliver's Mount (J.A.H.).

cinereoniger Wolf.—Rare. Forge Valley, Harwood Dale, Hayburn Wyke (J.A.H.) ; Kingthorpe Woods, 1929 (W.G.).

flavus L.—Common. Rather sporadic in its appearance.

var. *virescens* Moq.-Tand.—Thornton-le-Dale (G.F., Nat., 1922, p. 296).

marginatus Muell.—Common and generally distributed.

var. *nemorosa* Baud.—Beast Cliff (W.D.R., Nat., 1891, p. 289).

AGRIOLIMAX Moersch

reticulatus (Muell.) (= *A. agrestis* of British authors before 1941)—Very abundant and generally distributed.

var. *sylvatica* Moq.-Tand.—Newtondale (W.D.R., Nat., 1886, p. 273).

var. *albida* Pic.—Newtondale (W.D.R., Nat., 1886, p. 273).

var. *reticulata* Moq.-Tand.—Spa Gardens (E.M.M., Nat., 1943, p. 121) ; Castle Hill (E.A.W.).

var. *rufescens* Less. & Poll.—Scarborough Spa Gardens (E.M.M., Nat., 1943, p. 121).

var. *pallida* Schrenk.—Scarborough Spa Gardens (E.M.M., Nat., 1943, p. 121).

The true *A. agrestis* (L.) has not been recorded from the Scarborough area.

laevis (Muell.)—Common. Well distributed in damp places.

Class BIVALVIA

Order EULAMELLIBRANCHIATA

UNIONIDAE

UNIO Philipsson

pictorum (L.)—Rare. R. Hertford, the shells are small and often encrusted with algae, occurs in proportion of 10% *Unio* to 90% *Anodonta* (W.G.).

tumidus Phil.—The only evidence of the occurrence of this species in the district is a few dead shells found on the site of the old monastery at Seamer. The molluscs had been dead for many years (E.A.W.).

ANODONTA Lamarck

cygnea (L.)—Formerly in the Mere where the shells were clean and finely coloured, one specimen measured $6\frac{5}{8}$ ins. Also in the Valley pond, where the shells were dark and tumid, but in 1927 only dead shells could be found there. In 1898 a remarkably deformed specimen was taken in the Valley pond (E.A.W., Journ. Conch. xiii, 1910, pp. 97-8), and curiously distorted shells have been found in a pond at Langdale End (E.A.W.). Occurs in R. Hertford, Scalby Cut and Peasholm Lake.

var. **arenaria** Schrot.—R. Hertford (J.A.H.).

anatina (L.)—Occurs in Scalby Cut, R. Hertford and Burniston Beck.

SPHAERIIDAE

SPHAERIUM Scopoli

corneum (L.)—Abundant on the Carrs. Formerly in the Mere and nearby ditches. Also recorded from Kingthorpe ponds (G.F., Nat., 1929, p. 345). Hertford River, 1954 (A.J.W.).

transversum (Say)—In 1908 12 young specimens were introduced into a pond in Burniston Road, and 23 into a pond opposite Burniston school, but both ponds have long since been drained and built over (E.A.W.).

lacustre (Muell.)—Not common but well distributed.

PISIDIUM Pfeiffer, C.

Most of the records for this genus are old and the specimens not now available for re-examination. Revision of the genus has made such records unreliable and it seems desirable to omit all but the following which have been verified by D. K. Kevan of Edinburgh and A. E. Ellis of Epzom in 1943, from the collection of A. Smith.

amnicum (Muell.)—Abundant and widely distributed.

cinerum Ald. (= **casertanum** (Poli))—Scarborough (W.G.); pond near Silpho and Ruston stream, 1954 (A.J.W. det. A.W.S.).

personatum Malm.—Throxenby Mere, 1930, Burniston Road, 1937 (A.S.).

obtusale (Lam.)—Cayton Bay, 1920, Lady Edith's Drive (A.S.); Hackness, ditch near Sherburn, 1954 (A.J.W. det. A.W.S.).

milium Held—Cayton Bay, 1920 (A.S.).

subtruncatum Malm.—Throxenby Mere, 1920 (A.S.); ditch near Sherburn, 1954 (A.J.W. det. A.W.S.).

henslowanum (Shepp.)—Scarborough (A.S.).

hibernicum (West.)—Scarborough (A.S.).

nitidum Jenyns—Stream near Brompton, 1954 (A.J.W. det. A.W.S.).

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MARINE FISHES

Professor E. A. Spaul

Introduction

Fishing has been a prominent feature of life on the Yorkshire coast for so long that it is not surprising to find a published list of Fishes dating as far back as the early part of the last century and even earlier records. The extent of the coastline and the catches of local fishing fleets have provided opportunities for a succession of naturalists over the years to gather much information upon the variety and abundance of the fish to be found. Its completeness is due in great part to the enthusiasm and persistent interest of that distinguished and experienced naturalist the late W. J. Clarke, who was the Scarborough Field Naturalists' Society recorder of fishes for so many years. Apart from his own numerous observations he collected all previous reliable records and compiled the "List of Yorkshire Marine Fishes" published in *The Naturalist* 1944, with many valuable notes upon their abundance, time of appearance and distribution. His work is essentially the basis of the present list in which the fish are classified according to the British Museum List of British Vertebrates, 1935. Reference has been made also to the Fauna Lists of Plymouth and the Isle of Man, Travis-Jenkins' "The Fishes of the British Isles", and other publications. In the final revision of the list the author had the benefit of the advice of Dr. Ethelwyn Trewavas and Mr. D. W. Tucker of the British Museum. The records, with often only general or approximate locations given, cover a very wide area with no well-defined limits from the coast seawards or along the coast as in the case of sections dealing with the land fauna and flora. The greater freedom of movement and uniformity of the medium make a rigid definition of boundaries impossible and undesirable for an appreciation of the real character of the fish population with its variations and changes. Further, as many of these records are the result of landings made at Scarborough, much valuable and important information would be lost if their acceptance was determined by the relation of their location to a prescribed area.

The list is of great interest and value not only for its length and the rare specimens included but also for its indication of the fluctuations in the fish population with the seasons and the changes observable over a period of years. Some species are inshore, others deep sea in habit, many more inshore only during the spring and summer for spawning or for food, coming shorewards either individually or in small groups or shoals. The seasonal preference of some is the result of a migration from a distance beyond this region. Many of these migrations, like the shoals appearing in the shallow waters during the warmer months, have an established regularity and are characteristic of this coast, but some are rare and accidental in their occurrence, a few having wandered far from their usual habitats. Among the rarer species, some have not been

recorded again since the latter part of last century; others, however, are relatively recent records and there are those occasional visitors with long and variable intervals between their appearances. It would seem that most fish have maintained their numbers, but some reported as abundant in the early records are now rare, whilst others, like the Tunny, hardly seen apparently in the old days, are now common during part of the year at least. These variations in the appearance and abundance of different species over a period of years suggest the possibility of changing conditions (climatic, fluctuations in the seasonal range of salinity, temperature, etc.), even though recording may have improved, but whether changes in the great expanse of the sea or local factors are responsible cannot be decided in the absence of further information. Nevertheless, the value and importance of continuous records such as these cannot be over-emphasised, since they can be usefully correlated with more specific investigations and at the same time provide evidence relevant to many other problems. In some cases the cause is known. Pollution on the shore or from rivers has reduced the numbers of salmon and possibly affected some inshore fish, and overfishing has produced a decline in size and quantity of some species landed by trawlers in recent times.

Class MARSIPOBRANCHII

Order HYPEROARTIA

PETROMYZONIDAE

PETROMYZON Linnaeus

marinus L.—SEA LAMPREY—not common, attacks tunny.

LAMPETRA Gray

fluviatilis (L.)—LAMPERN, RIVER LAMPREY—enters Scalby Beck for spawning, seen in Derwent and Esk, but less commonly in sea.

Order HYPEROTRETA

MYXINIDAE

MYXINE Linnaeus

glutinosa L.—HAGFISH or BORER—in deep water, not common, found inside cod and ling, occasionally washed ashore after a storm (emaciated victims called “slinks”).

Class SELACHII

Sub-Class EUSELACHII

Order PLEUROTREMATA

HEXANCHIDAE

HEXANCHUS Rafinesque

griseus (Bonn.)—SIX-GILLED SHARK—two brought in from Icelandic waters (1938) but there are no Yorkshire records although it occasionally strays into North Sea.

LAMNIDAE

LAMNA Cuvier

cornubica (Gmel.)—PORBEAGLE, called "SKATE SCAUPER"—most abundant of the larger sharks, off Yorkshire coast especially in summer.

CETORHINUS Blainville

maximus (Gunn.)—BASKING SHARK—not common, only small specimens seen.

ALOPIAS Rafinesque

vulpes (Gmel.)—THRESHER or FOX SHARK—rare, very few records.

SCYLIORHINIDAE

SCYLIORHINUS Blainville

stellaris (L.)—LARGE or GREATER-SPOTTED DOGFISH, NURSEHOUND—scarce.

canicula (L.)—LESSER SPOTTED DOGFISH, ROUGH HOUND—not common and irregular in appearance.

CARCHARINIDAE

CARCHARINUS Blainville

glaucus (L.)—BLUE SHARK—caught occasionally off coast; one stranded on rocks, Filey Brigg, Dec., 1925.

GALEORHINUS Blainville

galeus (L.)—TOPE, known as "SWEET WILLIAM"—fairly common in deep water off Scarborough during the summer.

MUSTELUS Cuvier

mustelus (L.)—SMOOTH HOUND—said to be common in Bridlington Bay and off Scarborough years ago, but not recorded for some 60 years.

SQUALIDAE

ECHINORHINUS Blainville

brucus (Bonn.)—SPINOUS or BRAMBLE SHARK—accidental and rare visitor.

SQUALUS Linnaeus

acanthias (L.)—PIKED DOGFISH, SPUR DOG—a small shark abundant in summer and caught in trawl, herring nets and on lines; when skinned sold as "Deep Sea Gurnards"; can inflict poisonous wound with spines in front of dorsal fins.

SOMNIOSUS Le Sueur

microcephalus (Schneid.)—GREENLAND or SLEEPER SHARK—accidental and rare visitor.

SQUATINIDAE

SQUATINA Duméril

squatina (L.)—MONK, ANGEL or FIDDLE FISH—not common, occasionally in trawl nets.

Order HYPOTREMATA

TORPEDINIDAE

TORPEDO Houttuyn

marmorata Risso—MARBLED ELECTRIC RAY—accidental and rare occurrence (only one record).

nobiliana Bon.—COMMON ELECTRIC RAY—accidental and rare occurrence.

RAJIDAE

RAJA Linnaeus

montagui Fowl.—SPOTTED RAY, HOMELYN RAY—fairly common all the year.

clavata L.—THORNBACK RAY—abundant in deep water throughout the year. A white variety caught 8 miles off Scarborough, Sept., 1929, and a hermaphrodite (male organs on right, female on left), Dec., 1930.

radiata Don.—STARRY RAY, locally "JENNY HANOVER"—formerly rare, now abundant throughout the year.

maevus Muell. & Henle—CUCKOO RAY, locally "BUTTERFLY"—resident but not abundant; an almost completely white variety (male) was caught near Scarborough, June, 1930.

fullonica L.—SHAGREEN RAY, FULLER'S RAY, locally "WHITEHOUSE"—resident, not common.

batis L.—SKATE, FLAPPER SKATE, locally "BLUE SKATE"—resident and common in deep water.

oxyrhynchus L.—LONG-NOSED SKATE, locally "FAIR-WIND FISH"—resident, not common.

TRYGONIDAE

TRYGON Cuvier

pastinaca (L.)—STING RAY—occasional visitor but not common; an unusual colour variety was caught 18 miles off Scarborough, 1930 (almost black above, bright red with black margin beneath).

MYLIOBATIDAE

MYLIOBATIS Duméril

aquila (L.)—EAGLE RAY—one record only, the first British record.

Sub-Class HOLOCEPHALI

CHIMAERIDAE

CHIMAERA Linnaeus

monstrosa L.—CHIMAERA, RABBIT-FISH—specimen exhibited in Scarborough, 1935, but doubtful if caught in North Sea. No other records.

Class PISCES

Sub-Class PALAEOPTERYGII

Order CHONDROSTEI

ACIPENSERIDAE

ACIPENSER Linnaeus

sturio L.—STURGEON—a few, mostly small, taken every year in trawl nets.

Sub-Class NEOPTERYGII

Order ISOSPONDYLII

CLUPEIDAE

CLUPEA Linnaeus

harengus L.—HERRING—very abundant in summer, less so in winter.

sprattus L.—SPRAT—in great shoals inshore in summer; shoals mixed with sand eels are known locally as "Sile".

ALOSA Cuvier

alosa (L.)—ALLIS SHAD—not uncommon, brought in by both trawl and herring boats.

fallax (Lac.)—TWAITE SHAD—frequent appearance but not common (both shads are given locally the name "King Herring").

SARDINA Antipa

pilchardus (Walb.)—PILCHARD, SARDINE—Casual visitor in summer.

GONOSTOMATIDAE

MAUROLICUS Cocco

muelleri (Gmel.)—SHEPPY ARGENTINE, PEARLSIDE—this little phosphorescent fish is washed ashore at Scarborough on rare occasions.

SALMONIDAE

SALMO Linnaeus

salar L.—SALMON—moves along coast in numbers during summer.

trutta L.—SEA-TROUT or BROWN TROUT—large numbers around coast in summer, netted in shallow water off Scarborough.

ARGENTINIDAE

ARGENTINA Linnaeus

sphyraena L.—HEBRIDAL ARGENTINE—one record, Yarrell, Redcar, Feb., 1852.

silus (Asc.)—ARGENTINE—one record, taken off Scarborough, sent to British Museum.

OSMERIDAE

OSMERUS Linnaeus

eperlanus L.—SMELT—in estuaries of Tees and Humber, not seen off Scarborough.

Order APODES

ANGUILLIDAE

ANGUILLA Shaw

anguilla (L.)—COMMON EEL—considerable migration along coast during autumn as they leave fresh water for Atlantic breeding ground.

CONGRIDAE

CONGER Cuvier

conger (L.)—CONGER—resident but not abundant.

Order SYNENTOGNATHI

SCOMBERESOCIDAE

SCOMBERESOX Lacepède

saurus (Walb.)—SAURY—a rare and occasional visitor.

BELONIDAE

BELONE Cuvier

belone (L.)—GARFISH, locally "MACKEREL GUIDE"—common in inshore waters in summer.

EXOCETIDAE

EXOCOETUS Linnaeus

volitans L.—FLYING FISH—record by T. Stephenson (Nat., 1894).

Order SOLENICHTHYES

SYNGNATHIDAE

ENTELURUS Duméril

aequoreus (L.)—SNAKE PIPEFISH—resident, not common, sometimes cast up after storms.

NEROPHIS Rafinesque

ophidion (L.)—STRAIGHT-NOSED PIPEFISH—among a list of fishes given in 1882 and earlier in 1860; recorded by Stephenson, 1880; no recent record.

lumbriciformis (Yarr.)—WORM PIPEFISH—not common, resident in inshore waters, may be found beneath stones at low tide.

SYNGNATHUS Linnaeus

acus L.—GREATER PIPEFISH—resident, fairly common along coast, often found in crab-pots.

SIPHONOSTOMA Kaup

typhle (L.)—BROAD-NOSED PIPEFISH—only record by Woodall but no date or details.

HIPPOCAMPUS Rafinesque

hippocampus (L.)—SEA-HORSE—very rare, records give no dates or details.

Order ANACANTHINI

MERLUCCIIDAE

MERLUCCIUS Rafinesque

merluccius (L.)—HAKE—not very common, occasional small specimens brought in by trawlers.

GADIDAE

GADUS Linnaeus

callarias L.—COD—resident, very abundant both inshore and in deep water; average size of adult decreasing as over-trawling of North Sea does not give fish time for full development; fish weighing 56 lb., measuring 47 ins. in length caught at Scarborough, Mar., 1941, found on examination of vertebrae to be approx. 25 yrs. old; six hermaphrodites have been noted and also some stunted specimens known locally as "Lordfish"; small fish are known as "Codling", medium size "Sprays".

aeglinus L.—HADDOCK—resident, still abundant but decreasing owing to over-trawling.

luscus L.—BIB, POUT, locally "BLIN"—not common but often in limited numbers in catches from deep and inshore waters (some mistaken for John Dory).

minutus L.—POOR COD, POWER—only two records although this smallest member of the cod family is said to be common all round the British Isles (Travis-Jenkins).

merlangus L.—WHITING—resident, abundant, coming inshore during warm months in large numbers.

poutassou (Risso)—POUTASSOU, COUCH'S WHITING—one record, Whitby, 1896 (Nat., 1896, Stephenson).

virens L.—COALFISH, locally: adult "BLACK JACK"; smaller "BILLET"; young "PARRS"—resident, abundant in rocky parts of coast, smaller average size than formerly.

pollachius L.—POLLACK, locally "WHITING PULLET"—not usually abundant but sometimes in warm months in considerable shoals coming inshore pursuing sprats and sand eels.

UROPHYCIS Gill

blennoides (Bruenn.)—GREATER FORK-BEARD—occasionally caught at long intervals.

MOLVA Fleming

molva (L.)—LING, locally small specimens "GRIZZLES"—common near to the coast, usually in deep water.

ONOS Risso

mustelus (L.)—FIVE-BEARDED ROCKLING—resident, common in rock pools.

tricirratus (Bloch)—THREE-BEARDED ROCKLING—not common, odd specimens occasionally both in deep and in shallow water.

RANICEPS Cuvier

raninus (L.)—LESSER FORK-BEARD or TADPOLE FISH—occurs sparingly in deep and inshore water and at times cast ashore after rough seas.

BROSME Cuvier

brosme (Muell.)—TORSK, TUSK—one recorded at Whitby, 1937; also in Ferguson's List of Redcar Fishes (1860).

Order ALLOTRIOGNATHI

LAMPRIDIDAE

LAMPRIS Retzius

guttatus (Bruenn.)—OPAH, MOON FISH—extremely rare accidental visitor, last record 1869.

TRACHYPTERIDAE

REGALECUS Bruennich

glesne (Asc.)—RIBBON FISH or OAR FISH—deep water species occasionally stranded on British shores, seven records from 1750-1880; one stranded at Flamborough, 1882 or 1883, and one at Robin Hood's Bay, May, 1933.

Order ZEOMORPHI

ZEIDAE

ZEUS Linnaeus

faber L.—JOHN DORY—not abundant, sometimes taken in trawl.

CAPROIDAE

CAPROS Lacepède

aper (L.)—BOAR FISH—very rare accidental visitor, two records 1860 and 1877.

Order PERCOMORPHI

SERRANIDAE

MORONE Mitchill

labrax (L.)—BASS—this fine sea perch is not abundant off our coast, but limited numbers are caught at intervals, chiefly in our southern area. The largest caught weighed 18 lb. (Filey Brigg), but it is usually smaller.

SERRANUS Cuvier

cabrilla (L.)—COMBER—occasionally wanders to British waters from the Red Sea, Mediterranean and Eastern Atlantic; one record for the Yorkshire coast in 1938 was the first east of Dover Straits.

CARANGIDAE

TRACHURUS Rafinesque

trachurus (L.)—SCAD, HORSE MACKEREL—common close inshore during the summer; actually good and palatable food.

BRAMIDAE

BRAMA Schneider

raii (Bloch)—RAY'S SEA BREAM—irregular visitor, sometimes appears in considerable numbers stranded on beach.

SCIAENIDAE

SCIAENA Linnaeus

aquila (Lac.)—MEAGRE—an accidental and very rare visitor; two records, Redcar 1847, Flamborough 1873.

MULLIDAE

MULLUS Linnaeus

surmuletus L.—RED MULLET or SURMULLET—not common, occasionally in trawlers' catches, mostly small and yellow-striped variety.

SPARIDAE

DENTEX Cuvier

dentex (Gmel.)—DENTEX—only record 1932.

PAGELLUS Cuvier & Valenciennes

centrodontus (de la Roche)—COMMON SEA BREAM or RED BREAM—off-shore in small numbers, odd ones taken throughout the year.

owenii Guenth.—AXILLARY BREAM—very rare.

SPONDYLIOSOMA Cantor

cantharus (Gmel.)—BLACK BREEM or OLD WIFE—rare visitor from Eastern Atlantic and Mediterranean ; five records : Dec., 1910 (2), Jan., 1932, Oct., 1934, Oct., 1936, all near Scarborough.

CEPOLIDAE

CEPOLA Linnaeus

rubescens L.—RED BAND-FISH—said to have been cast ashore after storms (J. Cordeaux), no other records.

LABRIDAE

LABRUS Linnaeus

bergylta Asc.—BALLAN WRASSE, BERGYLT, locally "SEA PERCH"—resident, common on rocky parts of coast ; fishermen carry a triangular group of its throat teeth as amulet for good luck in fishing, called "bollan bones".

mixtus L.—CUCKOO or STRIPED WRASSE—one record (J. Cordeaux) for Yorkshire, no date or locality.

CTENOLABRUS Cuvier & Valenciennes

rupestris (L.)—GOLD-SINNY—one record of fresh specimen from stomach of Coalfish, apparently just caught, Nov., 1933. Scarborough.

AMMODYTIDAE

AMMODYTES Linnaeus

lanceolatus Lesauvage—GREATER SAND-EEL—common inshore in summer pursuing shoals of sprats.

tobianus L.—LESSER SAND-EEL—very abundant in coastal waters during summer ; mixed shoals of this fish and sprats are called "sile" locally.

TRACHINIDAE

TRACHINUS Linnaeus

draco L.—GREATER WEEVER—resident in deep water but not common, occasionally caught in trawl nets.

vipera Cuv. & Val.—LESSER WEEVER, locally "STINGING FISH" and "NATTER-PARR"—abundant in sandy bays close inshore, lies concealed in sand and can inflict a severe, painful wound with sharp stout spines of dorsal fin and gill cover which exude a poisonous secretion.

SCOMBRIDAE

SCOMBER Linnaeus

scombrus L.—MACKEREL—abundant in warm months, coming inshore in great shoals.

PNEUMATOPHORUS Jordan & Gilbert

colias (Gmel.)—SPANISH MACKEREL—one record (T. Boynton, Bridlington, 1861).

THUNNUS South

thynnus (L.)—TUNNY—two records up to 1853. In 1914 annual migration discovered on considerable scale during July, August and September; many caught in recent years mostly off Scarborough, usually between 500 lb. and 700 lb.; heaviest caught 851 lb., smallest 313 lb.

KATSUWONUS Kishinouye

pelamis (L.)—BONITO or STRIPED-BELLIED TUNNY—two records, 1882 and 1922.

SARDA Cuvier

sarda (Bloch)—PELAMID or SHORT-FINNED TUNNY—two records, both caught in salmon nets in Filey Bay (Aug., 1933—4 lbs.; June, 1936—8½ lbs.); possibly occurs more frequently but mistaken for large mackerel.

XIPHIDAE

XIPHIAS Linnaeus

gladius L.—SWORDFISH—casual but rare visitor; four records between 1808 and 1874; one stranded (10 ft.) at Redcar, 1914; tunny fishers and Dutch herring fishers claim to have seen many off Scarborough of recent years but none caught.

GOBIIDAE

GOBIUS Linnaeus

niger L.—BLACK GOBY—said to be common in rock pools at Redcar and Scarborough before 1881 but no records since then.

ruthensparri Euphr.—SPOTTED GOBY—common in rock pools and elsewhere along coast, swimming in small groups near L.W.M.

minutus Gmel.—FRECKLED or COMMON GOBY—said to be abundant in Scarborough rock pools (1881); only recent records Filey, 1928, Robin Hood's Bay, 1938.

jeffreysii Guenth.—JEFFREY'S GOBY—not abundant, occasionally in trawl net.

CALLIONYMIDAE

CALLIONYMUS Linnaeus

lyra L.—DRAGONET, locally "GREEN GUNNARD"—common in deep water, frequently seen in trawlers' catches.

BLENNIIDAE

BLENNIUS Linnaeus

pholis L.—SHANNY or SMOOTH BLENNY—very common resident in rock pools, fond of climbing out of water to bask in sunlight but dives into water when disturbed.

CORYPHOBLENNIUS Norman

galerita (L.)—YARRELL'S or CRESTED BLENNY—very rare resident in rock pools; few records: 1832, in list of Scarborough fish (Murray); Sept., 1835, Redcar; Nov., 1897, Scarborough; Mar., 1920, Filey; Feb., 1934, Burniston Bay.

PHOLIDAF

PHOLIS Scopoli

gunnellus (L.)—SPOTTED GUNNEL or BUTTERFISH, locally
 “ STINGING EEL ”—common rock pool resident.

ZOARCIDAE

ZOARCES Cuvier

viviparus (L.)—VIVIPAROUS BLENNY, locally “ TOM POUT ”
 —common resident in shallow inshore waters ; gives birth to
 perfectly formed living young.

ANARHICHADIDAE

ANARHICHAS Linnaeus

lupus L.—WOLF-FISH, CATFISH, locally “ WOOF ”—common.
 deep water resident frequently taken in trawl.

latifrons Steenstr. & Hallgr.—WOLF-FISH—rare, taken near
 Scarborough in trawl, Aug., 1929, and Aug., 1932.

STROMATEIDAE

CENTROLOPHUS Lacepède

niger (Gmel.)—BLACK FISH—very rare accidental visitor, two
 records : Redcar, Feb., 1852 ; Scarborough, Nov., 1902.

MUGILIDAE

MUGIL Linnaeus

chelo Cuv.—THICK-LIPPED GREY MULLET—one record
 (Newbolt, Whitby).

capito Cuv.—THIN-LIPPED GREY MULLET—occasionally in
 trawl nets, once reported abundant at Spurn ; there is confusion
 between different species of mullet which are very alike and past
 records are not reliable.

ATHERINIDAE

ATHERINA Linnaeus

presbyter Cuv.—SAND SMELT, ATHERINE—rare visitor.

Order SCLEROPAREI

SCORPAENIDAE

SEBASTES Cuvier

marinus (L.)—BERGYLT, NORWAY HADDOCK, locally
 “ SOLDIER FISH ” owing to red colour—seldom taken in North
 Sea as native of Northern waters off Iceland and Norway ; records
 1770 (Pennant) and Oct., 1933, both off Scarborough.

viviparus Kröy.—Smaller and possible local variety of above, single
 example taken at Scarborough, July, 1927.

TRIGLIDAE

TRIGLA Linnaeus

lucerna L.—YELLOW or SAPPHIRINE GURNARD, locally
 “ TUB ”—largest British gurnard, generally in trawlers' catches
 but not in great numbers and not usually full size.

cuculus L.—RED GURNARD—not common, a few brilliantly coloured fish are obtained each year from deeper water.

gurnardus L.—GREY GURNARD—abundant and commonest Yorkshire gurnard coming into shallow water in warm months; a red variety often mistaken for red gurnard.

lineata Gmel.—STREAKED GURNARD—rare, two records; Scarborough, Jan., 1897; Robin Hood's Bay, Feb., 1928.

lyra L.—PIPER—only records in lists published 1832 and 1881.

COTTIDAE

COTTUS Linnaeus

scorpius L.—SHORT-SPINED COTTUS, locally "DEVILLY"—common all along the coast, small ones in rock pools, larger in deeper waters.

bubalis Euphr.—LONG-SPINED BULLHEAD or COTTUS, SEA SCORPION—as abundant as short-spined species and has same bad name, both considered poisonous by fishermen.

quadricornis L.—FOUR-HORNED SEA BULLHEAD—not common, in deep water, four records: Feb., 1905; Sept., 1926; Jan., 1928; all in trawl off Scarborough; also one from Whitby, June, 1926.

AGONIDAE

AGONUS Schneider

cataphractus (L.)—POGGE, ARMED BULLHEAD—not very common, occurs from time to time in trawl nets and one rock pool record years ago.

CYCLOPTERIDAE

CYCLOPTERUS Linnaeus

lumpus L.—LUMPSUCKER, locally "STONE CLAGGER"—common, fish coming into tidal waters in spring where males guard mass of salmon-coloured eggs attached to rock between tide marks.

LIPARIDAE

LIPARIS Scopoli

liparis (L.)—SEA SNAIL—formerly common at Scarborough and often taken in crab-pots.

montagui (Don.)—MONTAGU'S SEA SNAIL—common in rock pools under stones near low tide mark.

GASTEROSTEIDAE

SPINACHIA Cuvier

spinachia (L.)—FIFTEEN-SPINED STICKLEBACK—resident, not common.

Order HETEROSOMATA

BOTHIDAE

SCOPHTHALMUS Rafinesque

maximus (L.)—TURBOT—in trawlers' catches in moderate numbers and occasionally caught close inshore, varieties dark on both sides not uncommon, albino caught Scarborough, May, 1939.

rhombus (L.)—BRILL—in moderate abundance in deep water, not often caught inshore.

LEPIDORHOMBUS Guenther

whiff-iagonis (Walb.)—MEGRIM, SAIL-FLUKE—in only moderate numbers.

PHRYNORHOMBUS Guenther

norvegicus (Guenth.)—NORWEGIAN TOPKNOT—frequently in trawlers' catches.

regius (Bonn.)—ECKSTROM'S TOPKNOT—in list of Redcar fishes, 1860.

ZEUGOPTERUS Gottsche

punctatus (Bloch)—COMMON TOPKNOT, locally "VELVET FISH"—not frequently seen.

PLEURONECTIDAE

HIPPOGLOSSUS Cuvier

hippoglossus (L.)—HALIBUT—now comparatively rare off coast and of smaller average size than formerly.

HIPPOGLOSSOIDES Gottsche

platessoides (Fabr.)—LONG ROUGH DAB—frequent in trawls, not uncommon in deep water, but no commercial value owing to small size.

LIMANDA Gottsche

limanda (L.)—DAB—resident, common in inshore waters especially during warm months.

PLEURONECTES Linnaeus

platessa L.—PLAICE—resident and abundant, average size smaller than formerly owing to overfishing; largest local record $10\frac{1}{2}$ lb., caught near Scarborough, Mar., 1935, and according to growth rings on vertebrae age 22-23 yrs. Albino and partial whites not uncommon.

MICROSTOMUS Gottsche

kitt (Walb.)—LEMON SOLE—resident, common in deeper water, largest local record $5\frac{3}{4}$ lb.

GLYPTOCEPHALUS Gottsche

cynoglossus (L.)—WITCH, POLE FLOUNDER—often in trawls but not numerous.

PLATICHTHYS Girard

flesus (L.)—FLOUNDER, locally "HANDBUTT"—resident, common, reversed specimens with eyes on left side not uncommon.

SOLEIDAE

SOLEA Quensel

solea (L.)—SOLE, DOVER SOLE—common in deeper water and occasionally comes into shallow tidal area; white and orange varieties occur.

MICROCHIRUS Bonaparte

boscanion (Chab.)—SOLENETTE—record from Whitby, 1881, no details.

Order PLECTOGNATHI

MOLIDAE

MOLA Cuvier

mola (L.)—SUNFISH—occasional visitor during warm months, specimens up to 120 lb. taken at Scarborough.

Order XENOPTERYGII

GOBIESOCIDAE

LEPADOGASTER Gouan

gouani Lacepède—CORNISH SUCKER—not common; in rock pools in Robin Hood's Bay.

Order PEDICULATI

LOPHIDAE

LOPHIUS Linnaeus

piscatorius L.—ANGLER, locally "MONK"—common in deep water, occasionally comes inshore, large specimens 4-5 ft. formerly taken in trawls, but rarely now.

FRESHWATER FISHES

Professor E. A. Spaul

INTRODUCTION

There is only one river, the Derwent, of any size in the district, but many streams or becks of varying length and size exist, as well as ditches and ponds and one or two larger stretches of water. These provide a variety of conditions and habitats—gravel and mud bottoms, still, fast- and slow-moving water, open and overgrown stretches—favouring a good selection of fish. The Derwent at its beginning drains with its tributaries the northern part of our area, flows south and east towards the coast but then turns south through the Forge Valley to Ayton and reaches the broad expanse of the valley between Scarborough and Pickering. Here it turns away from the coast and proceeds west, receiving more tributaries, and passes through Malton to join the Ouse later and reach the Humber. The streams in the north flow into the Esk which is beyond our northern boundary, and those in the east make their way to the coast. The Mere just outside Scarborough is a large and ancient stretch of water now some twenty acres in extent, although it has varied greatly in the past, and like the Derwent is noted for its fishing. At various times both the Mere and the Derwent have been restocked with fish (perch, carp, roach, tench, bream, trout and pike) to suit the needs of anglers, and good-sized fish are present in these waters according to weights recorded of specimens of the different species taken. Drought and pollution frequently affect the abundance of the fish.



TROUT (*Salmo trutta* L.) MATING, JANUARY, 1955

Photograph : E. Horsfall Turner

Local angling clubs have provided valuable information to supplement the records of the Scarborough Field Naturalists' Society, collected mainly, as in the case of the Marine Fishes, by the late W. J. Clarke. Reference has been made also to the Victoria History of the County of York. The classification is based on the British Museum list of British Vertebrates, 1935, and revised by Dr. Ethelwyn Trewavas and Mr. W. D. Tucker of the British Museum.

Class MARSIPOBRANCHII

Order HYPEROARTIA

PETROMYZONIDAE

LAMPETRA Gray

planeri (Bloch)—BROOK LAMPREY, PLANER'S LAMPREY—occasionally seen in the Derwent above Ayton, but often abundant in Scalby Beck, especially near its mouth.

Class PISCES

Sub-Class NEOPTERYGII

Order ISOSPONDYLI

SALMONIDAE

SALMO Linnaeus

salar L.—SALMON—occasional after a spate in Scalby Beck.

trutta L.—BROWN TROUT—numerous in the Derwent, common in Scalby Beck and other streams.

gairdnerii (Richardson)—RAINBOW TROUT—have been introduced into the Derwent and the Mere but they disappear by the following season. Some are caught in the lower Derwent later, on their way to the sea.

THYMALLUS Cuvier

thymallus (L.)—GRAYLING—numerous in the upper Derwent and common in the lower reaches, but numbers appear to be less than twenty years ago; also common in Scalby Beck.

Order HAPLOMI

ESOCIDAE

ESOX Linnaeus

lucius L.—PIKE—in the Derwent below Ayton and in the Mere which was stocked in 1921 with 25 18in. fish.

Order OSTARIOPHYSI

CYPRINIDAE

CYPRINUS Linnaeus

carpio L.—CARP—not uncommon in the Mere; the largest caught was 8lb.; the stock introduced in 1896 included a variety, the King Carp.

CARASSIUS Nilsson

carassius (L.)—CRUCIAN CARP—unknown in district until many were discovered in a pond at Kirby Misperton, averaging 8in. in length; introduced in June, 1942, into Scarborough and Throxenby Meres and into a pond at Wrea Head.

GOBIO Cuvier

gobio (L.)—GUDGEON—common in the Derwent and Scalby Beck, where they reach a large size; many in a pond near Cayton Bay, but small and mostly blind.

TINCA Cuvier

tinca (L.)—TENCH—introduced into the Mere in 1896 and now fairly common, specimens up to 4lb. taken; also occurs in a brick pond at Rillington.

PHOXINUS Agassiz

phoxinus (L.)—MINNOW—numerous in the Derwent especially below Ayton; common in the Mere and very abundant in Scalby Beck.

SQUALIUS Bonaparte

cephalus (L.)—CHUB—common in all streams and the Mere and reach 4lb. A 6lb. specimen caught in the Derwent at Yedingham.

LEUCISCUS Cuvier

leuciscus (L.)—DACE—numerous and large in the Derwent below Ayton; a specimen weighing 13½oz. caught at Ganton in November, 1934—a local record.

RUTILUS Rafinesque

rutilus (L.)—ROACH—common in the Derwent and reach large size; specimens taken up to 2lb.; introduced into the Mere years ago and now common; abundant also in the lake at Scampston.

ABRAMIS Cuvier

brama (L.)—BREAM, CARP BREAM—introduced into the Mere and now fairly common.

NEMACHEILUS Van Hasselt

barbatula (L.)—LOACH, STONE LOACH—common in Scalby Beck and the Derwent, especially the upper reaches.

Order APODES**ANGUILLIDAE****ANGUILLA** Shaw

anguilla (L.)—EEL, COMMON EEL—common in all streams.

Order ANACANTHINI**GADIDAE****LOTA** Cuvier

lota (L.)—BURBOT, locally BURBOT EELS—rare and local; occurs in the Derwent and Scalby Beck; has been reported in drains, ditches and slow streams.

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COTTIDAE

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Bull-head	367			Gudgeon	366

Haddock	357	Natterparr	359	Sardine	365	Striped Wrasse	
Hagfish	352	Norway Haddock		Saury	356		359
Hake	356		361	Scad	358	Sturgeon	354
Halibut	363	Norwegian		Sea Bream	358	Sun Fish	364
Handbutt	363	Topknot	363	Horse	356	Surmullet	358
Hebridal		Nurse Hound	353	Lamprey	352	Sweet William	353
Argentine	355			Perch	359	Swordfish	360
Herring	355	Oar Fish	357	Scorpion	362		
Homely Ray	354	Old Wife	359	Snail	362	Tadpole Fish	357
Horse Mackerel		Opah	357	Trout	355	Tench	366
	358			Shagreen Ray	354	Ten-spined	
		Parrs	357	Shanny	360	Stickleback	367
Jeffrey's Goby	360	Pearlside	355	Sheppy Argentine		Thick-lipped	
Jenny Hanover	354	Pelamid	360		355	Grey Mullet	361
John Dory	358	Perch	367	Short-finned		Thin-lipped	
		Pike	365	Tunny	360	Grey Mullet	361
Lampern	352	Piked Dogfish	353	Short-spined		Thornback Ray	
Large Dogfish	353	Pilchard	355	Cottus	362		354
Lemon Sole	363	Piper	362	Six-gilled Shark		Three-bearded	
Lesser Forkbeard		Plaice	363		352	Rockling	357
	357	Planer's Lamprey		Skate	354	Three-spined	
Sand Eel	359		365	Skate Scauper	353	Stickleback	367
Spotted Dogfish		Pogge	362	Sleeper Shark	353	Thresher	353
	353	Pole Flounder	363	Smelt	355	Tinker	367
Weever	359	Pollack	357	Smooth Blenny		Tittlebat	367
Ling	357	Poor Cod	357		360	Tom Pout	361
Loach	366	Pope	367	Hound	353	Tope	353
Long-nosed Skate		Porbeagle	353	Snake Pipefish	356	Topknot	363
	354	Pout	357	Soldied Fish	361	Torsk	357
Long Rough Dab		Poutassou	357	Sole	363	Trout	365
	363	Power	357	Solenette	363	Tub	361
Long-spined				Spanish Mackerel		Tunny	360
Bullhead	362	Rabbit Fish	354		359	Turbot	362
Cottus	362	Rainbow Trout		Spinous Shark	353	Tusk	357
Lumpsucker	362		365	Spotted Goby	360	Twaite Shad	355
		Ray's Bream	358	Gunnel	361		
Mackerel	359	Red Bandfish	359	Ray	354	Velvet Fish	363
Mackerel Guide		Gurnard	362	Sprat	355	Viviparous	
	356	Mullet	358	Spur-dog	353	Blenny	361
Marbled Electric		Ribbon Fish	357	Starry Ray	354		
Ray	354	River Lamprey		Stinging Eel	361	Whitehouse	354
Meagre	358		352	Stinging Fish	359	Whiting	357
Megrim	363	Roach	366	Ray	354	Whiting Pullet	357
Miller's Thumb		Rough Hound	353	Stone Clagger	362	Witch	363
	367	Ruffe	367	Loach	366	Wolf Fish	361
Minnow	366			Straight-nosed		Woof	361
Monk	364	Sail Fluke	363	Pipefish	356	Worm Pipefish	356
Monkfish	353	Salmon	355, 365	Streaked Gurnard			
Montagu's Sea		Sand Smelt	361		362	Yarrell's Blenny	
Snail	362	Sapphirine		Striped-bellied			360
Moon Fish	357	Gurnard	361	Tunny	360	Yellow Gurnard	
							361

REPTILES AND AMPHIBIANS

Elizabeth Rimington.

Of the sixteen species given in the British Museum List, eleven are recorded from our area. The two species of Turtle are perhaps the most interesting and unusual, though both are vagrants and not inhabitants.

The Viper is still fairly common in many parts of the moors, although local in its distribution. It does not as a rule grow to a great size and averages 20-22 ins. (males), and 23-25 ins. (females), though considerably larger ones have been recorded. During November and early December 1954 two pregnant female vipers were brought to Wood End Natural History Museum. In both cases eight young were born alive and lived for a short period in the Vivarium.

In this country the gestation period of this species is from two to three months. Fertilisation does not take place until towards the end of May and the peak period of the birth of young is from August to mid-September.

In North Sweden and Finland, as well as the mountainous regions of Europe, the breeding process is retarded into every second year, due to the shortness of the arctic summer, when the Viper is forced back into hibernation for a further eight or nine months.

It is possible in the two cases mentioned that the pregnancy was accelerated due to the warmth of the Vivarium. In normal cases the birth would not have taken place until the spring of 1955. It could be suggested that this late pregnancy might have been due to late mating, but this is very unlikely. H. Velsoe (Structure and Seasonal Variation of the Male Reproductive Organs of *Vipera Berus*, *Spolia Zool. Mus. Haumensis*, Copenhagen, 1944) has pointed out that during autumn only a small percentage of mature spermatozoa are present in the male. The most reasonable explanation is suggested by Dr. M. Smith (The British Amphibians and Reptiles, 243, 1951), that an unseasonal summer is responsible for the rare occurrences of delayed development.

The Viper is locally known as the "Hag-Worm", and a superstition that it will not die until sunset is common in country districts.

Our commonest reptile is the Viviparous Lizard. It is widely distributed and has been regularly recorded from both the moors and the cliffs. It is locally known as the "Dry-ask," and is considered by some of the older country folk to be more venomous than the Viper. There are no records of either snakes or lizards on the Wolds.

Both the Crested and Smooth Newts are common in many of the ponds and ditches. The Palmate Newt is very local and not common. Newts are locally known as "Wet-asks," and the Crested Newt is also called the "Doctor."

The arrangement and nomenclature used are those contained in the "List of British Vertebrates." (B.M., 1935).

Grateful thanks are due to Mr. G. G. Watson for much of the information concerning the Viper.

Abbreviations :

D.W.B.—D. W. Bevan ; W.J.C.—W. J. Clarke ; E.F.G.—E. F. Gilmour ; V.C.H.—Victoria County History, York ; B.M.—British Museum of Natural History ; E.A.W.—E. A. Wallis.

Square brackets imply that the record occurred just outside our area.

REPTILIA

CARETTA Rafinesque

caretta (L.)—Loggerhead Turtle. One taken alive at Scarborough, 1885, now preserved in Wood End Museum (W.J.C., teste B.M.).

DERMOCHELYS Blainville

coriacea (L.)—Luth or Leathery Turtle. Bell, in his "British Reptiles," records one taken at Scarborough in 1748 or 1749. [Bridlington Bay, Oct., 1871, 8-ft. long, 1000-lbs. in weight (V.C.H.)]

ANGUIS Linnaeus

fragilis L.—Slow-Worm. Common in all suitable localities.

var. *colchica* Dem.—Blue-Spotted Slow-Worm. Cloughton, two specimens, 1951. The most northerly record for Britain. Not previously found north of Lat. 51°-30', except for one specimen from Epping and from two Welsh localities (E.F.G.).

LACERTA Linnaeus

vivipara Jacq.—Common or Viviparous Lizard. Common on cliffs and moors.

NATRIX Laurenti

natrix natrix (L.)—Grass Snake. No reliable records in the wild state. Specimens taken on Oliver's Mount were possibly escaped pets from a near-by school.

VIPERA Laurenti

berus berus (L.)—Viper, Adder. Common but local on the moors. A Hackness postman, during his 44 years' service, killed over 500 vipers on his moorland rounds.

AMPHIBIA

TRITURUS Rafinesque

vulgaris vulgaris (L.)—Smooth Newt. Very common in almost every pond in the district (W.J.C.).

helveticus helveticus (Raz.)—Palmate Newt. Uncommon and local ; Throxenby Mere (D.W.B. and W.J.C.) ; Bloody Beck (E.A.W.) ; Cayton Bay, 1951 (E.F.G.).

palustris palustris (L.)—Crested Newt. Widely distributed and not uncommon (E.A.W.).

RANA Linnaeus

temporaria temporaria L.—Common Frog. Very common.

BUFO Laurenti

bufo bufo (L.)—Common Toad. Common and widely distributed.

BIRDS

A. J. Wallis.

During the whole history of the Society, the study of the bird life of the district has been prominent among the activities of many members. The names of W. J. Clarke, C. D. Head, W. Gyngell and T. N. Roberts are outstanding. H. H. Farwig, G. W. Temperley, E. A., and A. T. Wallis as well as many others have made valuable contributions which have helped to make these records more complete. W. J. Clarke, T. N. Roberts and the brothers Wallis were among the early pioneers in the art of bird photography. At the present time the Society is fortunate in having R. M. Garnett resident within the district, and the recorder acknowledges with thanks his valuable help in reading through and criticising these records. Similar thanks are due to R. Chislett, who read through the manuscript also and made helpful comments for the recorder's guidance.

With the variety and range of habitats to be found in the district it is not surprising that the list of records is a long one. Two hundred and seventy-nine different species are named, of which ninety-nine breed regularly. Six have bred in the past, but for various reasons have ceased to do so, and thirteen others have been recorded as breeding at irregular intervals. Thirty-six species are regular winter visitors or passage migrants, and thirty-eight are infrequent in their occurrence yet cannot be classed as vagrants. Over a long period of years seventy-three species have occurred as rare vagrants or accidental visitors. The remaining fourteen are birds of subspecific status, all of which have been conclusively identified.

During the many years, since the formation of the Society, interesting changes in the bird life have taken place. Some species have been lost to the district, or have become scarcer, but on the other hand several new species have appeared.

Probably the most serious loss is the disappearance of the Stone-Curlew which nested annually up to 1937. John Morley, who was keeper to the Earl of Londesborough, remembered it nesting on Seamer Moor in the late 1870's. It nested on the Wolds in small numbers as late as 1874, and the last stronghold of the bird was on the edge of the moors in the Pickering area. Partly owing to the afforestation of that area, but more probably due to the systematic robbery of the eggs by unscrupulous egg-collectors, it is now extinct as a local breeding bird.

The Corn-Crake, formerly common and widely distributed over the greater part of the district during the spring and summer, is now extremely rare, no records of its nesting having been made for many years. Its disappearance locally is but part of a decrease affecting the greater part of our islands, caused mainly by the development of the mowing machine. It would seem probable that the tractor is equally responsible for the very serious decrease in the breeding population of the Lapwing

within the district. The increase in numbers of the Rook may be a subsidiary factor, creating too strong a competition for the available food supply. During 1948 it was possible to travel from Scarborough to Pickering without seeing one pair of nesting Lapwings, where twenty years previously each field had two or more pairs nesting.

Neither the Swallow nor the House-Martin is as common now as formerly. The latter species nested regularly at one time as far down the town as the Old Bar, Scarborough and on other buildings in the main street. A large colony existed on the buildings of the pumping station at Cayton Bay, but was driven away when the gas engine was installed in 1913.

The break-up of the larger estates will, no doubt, account for the decline in the Pheasant population, whilst the general neglect of the moors with the subsequent planting of large areas with trees during the past two decades has driven the Red Grouse away from its old haunts.

Other birds that have become noticeably scarcer during the past sixty years are the Grey Wagtail, Ring-Ouzel, Whinchat, Stonechat, Kingfisher and Long-eared Owl. The Ring-Ouzel is now confined to one or two localities on the moors, and the Whinchat, once a common and regular visitor all round the town, nesting on the cliffs and Oliver's Mount, is rarely seen except in certain parts of the moors and on the Carrs. The decrease of the Stonechat has been even more complete, and very few records have been received for several years. There is no apparent reason for these decreases, as no change in the general habitats of these birds has taken place. The felling of the older woods during the 1914-18 war has made the Long-eared Owl only an occasional breeding species, where once it bred regularly.

To offset these losses in our local birds we can with some satisfaction record marked increases in many species, and the addition of several to the list of nesting birds. Among the most marked of the increases are the following :—Carrion Crow, Magpie, Goldfinch, Pied Flycatcher, Turtle-Dove, Oyster-Catcher, Kittiwake, and Red-legged Partridge.

The increase and spread of the Magpie is very marked. It used to occur only to the north of Scarborough in the cliffs at Ravenscar and Staintondale, and in a few isolated parts of the woodlands. It is now seen regularly within the town boundaries and is common throughout the whole district.

The Goldfinch was apparently a rare species when the Society was founded but is now quite common and nests regularly in the town gardens and surrounding countryside. It was particularly abundant in 1945 and '46, but the severe winter of 1946-47 had a disastrous effect on the bird, and very few were recorded the following summer.

The Pied Flycatcher is not a common bird in the district, being locally distributed in certain wooded areas. It has, however, extended its range as a breeding species during recent years. By the erection of nesting boxes in some of the afforested areas where formerly it was very rare, it has been induced to breed freely.

The spread of the Turtle-Dove is equally interesting. It was first recorded as nesting in the district in 1900, and has since become relatively common in many parts. A pair was found nesting in a garden on the South Cliff, Scarborough, in 1941. It is noticeable that the spread of this species through the district has been steadily from the south to the north, and not only to very local areas as is the case with the previous species. The Turtle-Dove is still rare to the north of Scarborough, yet each year it is recorded from a little further north than previously.

Why the Oyster-Catcher should have become more frequent along the coast is not known. At one time of rare occurrence, small parties may now be seen throughout the greater part of the year. It has not been known to breed, the birds seen during the summer presumably being non-breeding birds.

The Kittiwake, which has increased enormously in numbers at its chief breeding station on the cliffs at Bempton and Speeton, has also extended to one or two places northwards. It began nesting on the Castle Hill, Scarborough, about 1940, and by 1948 the colony had increased to about thirty pairs. This increase, since the bird is no longer persecuted for its feathers, seems hardly surprising, especially as at Bempton the birds are well established on the ledges some three weeks before the arrival of the Guillemots and Razorbills.

The most interesting events in local ornithology that have occurred in recent years are the arrival of those species which have been added to the list of breeding birds. The spectacular spread of the Fulmar Petrel, reaching the cliffs at Bempton in 1919, and gradually forming colonies all along our coastline, and the coming of the Little Owl to the district are two examples. The Nuthatch, Lesser Spotted Woodpecker have been recorded as nesting, though only at irregular intervals. The Reed-Warbler has returned as a regular breeding species after an absence of many years, and the Coot has nested spasmodically in recent years after a long absence.

The Little Owl, first recorded in 1924, has now spread into many parts of the district. It is more common on the Wolds than elsewhere, and there is no doubt that it breeds regularly, though in small numbers. The breeding of the Gannet at Bempton is interesting, but it is doubtful whether the colony will increase much owing to the lack of broad ledges. Before 1919 the Fulmar was known only as an offshore bird, and was rarely seen except by the fishermen, who know it as the "Mollymawk." In 1921, it was reported as having bred at Bempton and small colonies were formed about that time at many places between Flamborough Head and Whitby. It is now a regular visitor to the cliffs from January to the end of summer, and is known to have nested at several of its stations.

Two other birds, both of which have bred in the district, though long before the founding of our Society, may claim a brief note. The Great Bustard was once not uncommon on the Wolds where it nested regularly up to the early years of the last century, when the Enclosure Act was applied and the land was ploughed up. It became extinct as

a Yorkshire bird about 1835, the last known record being a bird at Foxholes. The Raven, also now a rare vagrant, nested on the Castle Hill, Scarborough, up to 1855, and a pair bred in Newton Dale, probably just outside our district, as late as 1875.

Finally, one or two interesting visitors should be mentioned. From the middle of November, 1925, and throughout the winter to the early part of April, 1926, a Red-spotted Bluethroat frequented the garden of the house where Mr. Clarke lived in Oak Road, Scarborough. It became remarkably tame during this time, but disappeared with the coming of spring. What is, however, more remarkable is the fact that this bird came again to the same place on 1st February, 1927, and stayed until 30th April. It is safe to assume that it was the same bird as the 1925-26 one for it would indeed be an extraordinary coincidence if two different birds of this rare species chose the one spot on the East Coast where they would be safest and receive the most cordial welcome in addition to an unlimited supply of specially cooked food.

Until 1946 the claim of the Eastern Rufous Turtle-Dove to be included in the list of British birds rested on a solitary example, a young bird captured near Scarborough on 23rd October, 1889. In 1888 there occurred an irruption of Pallas's Sand-Grouse into the district. This immigration was only a small part of a very large movement of these birds, thousands of them reaching England and Scotland and as far west as Ireland. Quite a number of them appear to have nested in England, and two clutches of eggs were taken near Beverley. In 1899, Mr. Clarke saw a flock of seven and picked up a dead bird in Cayton Bay. Since then the bird has appeared only once in our district, a flock of 30-40 birds being frequently seen on the Wolds between June and October, 1908, by Mr. W. H. St. Quintin.

No really long term observations on the migration of birds through the district have been made, but from what field work has been done it has become apparent that the district has certain peculiarities where migration is concerned. It will be seen that several species of passage migrants which use the "East Coast Route" regularly each year, are recorded only irregularly along our stretch of the coastline. It would seem that the shore between Teesmouth and Filey Brigg offers little in the way of feeding grounds. Owing to this it might be that many migrant birds, particularly waders and geese, take an overland route from Teesmouth to the Humber passing over the western parts of the district. This would explain the fact that at Thornton-le-Dale geese and many species of waders are recorded in larger numbers and much more regularly than along the shore. So far direct observations have not proved this, and it has been pointed out by Mr. R. Chislett that birds which move inland from Teesmouth may pass further west into the Vale of Mowbray, and not make for the Humber estuary. Also migrants that are seen in the Vale of Pickering in autumn may not have been to Teesmouth, or if they have may have travelled down the coast and come inland direct through the gap between the high ground of the moors and the Wolds.

It is also probable that many flocks of waders following the coast from Teesmouth to Flamborough miss the stretch of shore between Whitby and Filey Brigg, passing Scarborough well out to sea. There will also be an immigration direct from Scandinavia, and any birds on a course which brings them towards our stretch of coastline may well make for Flamborough Head as the most visible land fall if they are flying at a good height, striking land at Filey Brigg, especially if the wind is southerly. Low flying birds will approach the coast at almost any point and turn south as they approach land, possibly finding Filey Brigg to be the first suitable stopping place. If these conclusions are correct they would explain in some measure why the only point along our coast where waders are seen in any numbers is Filey Brigg.

It is interesting to note that the winter flocking of gulls that roost on the shore is almost exclusively confined to the small bays where reefs of rock are uncovered very soon after the tide has begun to ebb, though these bays may be deserted in favour of more sheltered places during severe weather. In contrast to the notes on the migrations of waders and geese mentioned above, it has been observed that the flocks of migrating gulls, particularly the Great Black-backed, Common and Black-headed Gulls, follow the coast line very closely.

The systematic order of the records which follow has been taken from Witherby's Handbook of British Birds, Vol. V, 1941. The more recently published classification—Wetmore's Order—and the dropping of the trinomial, have not been adopted because these changes came into use after most of the manuscript had been set up in type, and the cost to the Society in making the necessary alterations would have been more than could be afforded.

Contractions used in the text of the records following :—

P.M.—Passage migrant.

R.—Resident.

S.V.—Summer visitor.

W.V.—Winter visitor.

A.I.B.—A. I. Burnley.

W.J.C.—W. J. Clarke.

W.E.C.—W. E. Collinge.

M.E.—Miss M. Ealing.

R.M.G.—R. M. Garnett.

O.G.—O. Grabham.

W.G.—W. Gyngell.

M.F.M.M.—M. F. M.

Meiklejohn.

J.M.—J. Morley.

T.N.R.—T. N. Roberts.

R.S.—R. Smith.

E.W.W.—E. W. Wade.

M.E.W.—Mrs. M. E. Waites.

A.J.W.—A. J. Wallis.

A.T.W.—A. T. Wallis.

E.A.W.—E. A. Wallis.

E.O.W.—E. O. Wallis.

J.R.W.—J. R. Wilkinson.

Brit. Birds—British Birds
Magazine.

Hand. Brit. Birds, 1938—
The Handbook of British
Birds, 1938 et seq.

Nat.—The Naturalist.

Nel.—Thomas H. Nelson,
The Birds of York-
shire, 1907.

Scar. Nat. Records—

Records of the Scar-
borough Field Natural-
ists' Society.

Yorks. Birds—Ralph Chis-
lett's Yorkshire Birds,
1952.

Zool.—The Zoologist.

CLASS AVES

Order PASSERIFORMES

CORVIDAE

CORVUS Linnaeus

corax corax L.—RAVEN. Rare vagrant. Nested on the Castle Cliff, Scarborough, up to 1855, and in Newton Dale, near Pickering, about 1875 (Nel., p. 236). Last recorded during 1944 when a pair was seen several times on Seamer Moor during August (W.J.C.) ; and one during October on Silpho Moor (T.N.R.).

cornix cornix L.—HOODED CROW. W.V. Fairly common. Chiefly on the coast. Exceptional numbers at Thornton-le-Dale in early March, 1942, when more than 100 roosted on high ground ; believed to be on passage to N.E., but held up by adverse weather (R.M.G.). Instances of pairs staying to breed are recorded at Flamborough in 1858, 1871, 1876 and 1887, and there is also a record of a female mating with a Carrion Crow at Hackness (Nel., p. 246).

corone corone L.—CARRION CROW. R. Common. A considerable increase in numbers during recent years.

frugilegus frugilegus L.—ROOK. R. Very abundant. Absent from the moors as a breeding species. Hackness Park has several large rookeries, 570 nests being counted in 1947 (A.J.W.).

monedula spermologus Vieill.—JACKDAW. R. Abundant.

PICA Brisson.

pica pica (L.)—MAGPIE. R. Very common. Formerly restricted to the undercliffs at Ravenscar and a few other localities. In recent years has increased and spread throughout the district. Nests freely, using tall hedgerows in the Vale of Pickering. These are being cut down everywhere and different sites will have to be found, which may affect its status (R.M.G.).

GARRULUS Brisson

glandarius (L.)—JAY. R. Not common. Breeds locally in wooded areas. A flock of up to 20 birds seen in scrub on the edge of the moors, 8 Feb., 1948. It has been suggested that such winter flocks may be Continental birds (M.F.M.M., A.J.W.).

PYRRHOCORAX Tunstall

pyrrhocorax pyrrhocorax (L.)—CHOUGH. No definite records, but the late Canon Atkinson writing in 1861 states that the Chough " was until lately (1861) known to breed at Flamborough " (Nel., p. 224).

STURNIDAE

STURNUS Linnaeus

vulgaris vulgaris L.—STARLING. R. and W.V. Abundant. Recoveries of wintering birds indicate migrations from Russia and Scandinavia, e.g., one ringed Lidsen, Liveland, Russia, June, 1912—recovered Scarborough, 1 Jan., 1914 ; one ringed Thornton-le-Dale, 14 Dec., 1937 (R.M.G.)—recovered Koge, Denmark, 10

June, 1939 ; one ringed Scarborough, 1 Jan., 1951 (A.J.W.)—recovered near Leningrad, Russia, August, 1951 ; one ringed near The Hague, Holland, 29 Sept., 1952—recaught Scarborough, 13 Feb., 1953 (A.J.W.). Winter visitors arrive from mid-September to the end of October, large flocks gathering along the coast before dispersal throughout the district. Departure about the middle of April, usually at night (Nel., p. 217). The size of the flocks wintering in the district has increased considerably in recent years, and flocks from a radius of up to 10 miles gather together each evening to roost. One combined flock, numbering many thousands of birds, used a small conifer plantation at Wykeham as a roost during the winter of 1952-3, and did considerable damage to the trees (A.J.W.).

PASTOR Temminck

roseus (L.)—ROSE-COLOURED STARLING. One record, Scarborough, July, 1863 (A. Roberts, MS., Nel., p. 222).

ORIOLIDAE

ORIOLUS Linnaeus

oriolus oriolus (L.)—GOLDEN ORIOLE. Rare vagrant. A male, Hackness, 9 July, 1911 (Nat., 1911, p. 330). One seen Suffield, 20 July, 1932 (J.R.W.). A female seen on the cliffs at Robin Hood's Bay, 11 May, 1947 (C. E. A. Burnham).

FRINGILLIDAE

COCCOTHAUSTES Brisson

coccothraustes coccothraustes (L.)—HAWFINCH. R. Uncommon. Breeds regularly in the district in small numbers. Flocks seen in winter (R.M.G.).

CHLORIS Cuvier

chloris chloris (L.)—GREENFINCH. R. and W.V. Common. Decreased in numbers about 1925, but has increased since.

CARDUELIS Brisson

carduelis britannica (Hart.)—BRITISH GOLDFINCH. R. Variable. Rare in and about 1897, but has increased steadily from 1920's onwards, being very common during 1946. Was almost exterminated during severe winter, 1946-47. Had more than recovered in numbers by 1953.

spinus (L.)—SISKIN. P.M. and W.V. Rare. Small numbers recorded every year, but is probably frequently overlooked.

flammea flammea (L.)—MEALY REDPOLL. W.V. Irregular. Recorded Flamborough, Jan., 1907 (T. H. Nelson ; Yorks. Birds, p. 48), Scarborough Mere, Nov., 1921 (T.N.R.), and at Thornton-le-Dale, Nov., 1945 (R.M.G.). Doubtless often overlooked.

flammea cabaret (Muell., P.L.S.)—LESSER REDPOLL. R. and W.V. Fairly common. Has shown a marked increase during recent years.

hornemmanni exilipes (Coues)—COUES'S REDPOLL. Rare vagrant. Recorded at Scarborough, 18 Dec., 1925 (W.J.C., Nat., 1926, p. 171).

flaviostris pipilans (Lath.)—BRITISH TWITE. R. Rare. Four or five records. A nest was found at Thornton-le-Dale, 5 June, 1922 (A.I.B.).

cannabina cannabina (L.)—LINNET. R. Common. Has increased generally in recent years, very large flocks occurring along the coast and in the Vale of Pickering during the winter.

PYRRHULA Brisson

pyrrhula pyrrhula (L.)—NORTHERN BULLFINCH. Rare vagrant. One obtained at Hunmanby, Nov., 1894 (Nel., p. 195).

pyrrhula nesa Math. & Ir.—BRITISH BULLFINCH. R. Not common. Has increased in recent years, breeding regularly throughout the district in suitable localities. An unusual nest was found on 5 Aug., 1949, on Hutton Buscel Moor, built amongst bracken and only 3 feet from the ground (A.J.W.).

PINICOLA Vieillot

enucleator enucleator (L.)—PINE-GROSBEAK. Accidental visitor. One shot at Littlebeck about 1861 (Nel., p. 196).

LOXIA Linnaeus

curvirostra curvirostra L.—COMMON CROSSBILL. Rare. Recorded very occasionally up to 1927, in which year an irruption occurred, birds being seen in many wooded areas. Since then has been recorded more frequently, and nesting was proved in 1943 (R.M.G.). As part of a widespread visitation in 1953 several records were made in the district, including a party of c.12 at Scarborough on 19 July (A.J.W.); at Thornton-le-Dale, 28 July (R.M.G.), and one on Pexton Moor in October (K. Green).

leucoptera bifasciata (Brehm)—TWO-BARRED CROSSBILL. Accidental visitor. Recorded in 1898 at Flamborough (Nel., p. 201). One seen in a pine wood near Goathland on 3 May, 1931 (W. S. Medlicott, Yorks. Birds, p. 54).

FRINGILLA Linnaeus

coelebs L.—CHAFFINCH. R. and W.V. Very common. Winter flocks probably increased by influx of continental birds.

montifringilla L.—BRAMBLING. W.V. Fairly common. Occurs regularly in varying numbers from about mid-October to end of March or early April.

EMBERIZA Linnaeus

calandra L.—CORN-BUNTING. R. Local. Can be considered common on the Wolds, but is rare north of the Vale of Pickering.

citrinella citrinella L.—YELLOW BUNTING. R. Very common.

[**cioides castaneiceps** Moore—EAST SIBERIAN MEADOW-BUNTING. One record. A bird caught alive on the shore at Flamborough, Nov. 1886 (Ibis, 1889, pp. 293-4 and 296). In a re-examination of this bird, R. Wagstaffe and K. Williamson, late of the Yorkshire Museum, York, came to the conclusion that it should

not stay on the list of British birds (North Western Naturalist, March-June, 1947, A Re-Examination of the British Record of *Emberiza cioides* Brandt).]

schoeniclus schoeniclus (L.)—REED-BUNTING. R. Not common. Breeds regularly in small numbers, mainly on the Carrs.

CALCARIUS Bechstein

lapponicus lapponicus (L.)—LAPLAND BUNTING. Occasional visitor. Four records. A bird netted with Skylarks at Scarborough, 6 Jan., 1893 (W.J.C.); an adult male close to the Bampton Cliffs on 11 May, 1893 (M. Bailey and J. Cordeaux); a considerable flock near Flamborough village in Nov., 1893 (M. Bailey); on Yons Nab, Gristhorpe Bay, one on 17 Jan., 1954, and two on 31 Jan., 1954 (A.J.W.). Probably overlooked amongst flocks of other species.

PLECTROPHENAX Stejneger

nivalis nivalis (L.)—SNOW-BUNTING. W.V. Occurs in small flocks, chiefly along the coast.

PLOCEIDAE

PASSER Brisson

domesticus domesticus (L.)—HOUSE SPARROW. R. Very abundant. Absent only from the moors and uninhabited moorland valleys.

montanus montanus (L.)—TREE-SPARROW. R. Local and not common.

LULLULA Kaup

arborea arborea (L.)—WOOD-LARK. Two records, one at Goathland on 7 Jan., 1927 (W. S. Medlicott, Yorks. Birds, p. 63), and three birds seen at Cayton Bay, 31 Oct., and 1 Nov., 1949 (H.P., A.J.W., E.A.W.).

ALAUDA Linnaeus

arvensis arvensis L.—SKY-LARK. R. and P. M. Common. Found chiefly in the cultivated parts, but occurs on the moors occasionally. Large flocks come from the Continent in autumn, but do not usually stay for the winter.

EREMOPHILA Boie

alpestris flava (Gm.)—SHORE-LARK. W.V. Rare. An unusually early record was made at Filey, 15 July, 1922 (Nat., 1922, p. 320). Last record, three on the Filey Cliffs on 26 Nov., 1950 (A.J.W.).

MOTACILLIDAE

ANTHUS Bechstein

trivialis trivialis (L.)—TREE-PIBIT. S.V. Not uncommon in wooded localities with open spaces.

pratensis (L.)—MEADOW-PIBIT. R. Common. Breeds regularly all over the district, but chiefly on the moors. Is found along the coast in winter, the numbers being increased by migratory birds. A juvenile ringed on Yons Nab, Gristhorpe Bay on 9 June, 1949, was in Portugal on 30 Oct., 1949 (A.J.W. and E. P. Leach, Brit. Birds, Vol. 53, p. 314).

spinoletta spinoletta (L.)—WATER-PIBIT. W.V. Very rare. Recorded at watercress beds near Pickering in 1939-40-41 (R.M.G., Nat., 1941, p. 92 and 1942, p. 98).

spinoletta petrosus (Mont.)—ROCK-PIBIT. R. Fairly common. Occurs along the coast throughout the year, the numbers being increased in winter.

MOTACILLA Linnaeus

flava flava L.—BLUE-HEADED WAGTAIL. One record, one at Flamborough on 12 May, 1950 (H.F. Woods, Nat., 1951, p. 58).

flava flavissima (Blyth)—YELLOW WAGTAIL. S.V. Rare. A pair nested near Scarborough Mere in 1922-3-4 (T.N.R., Nat., 1923, p. 27, and 1925, p. 22). Passage migration through the Vale of Pickering during April and May, 1947, and birds seen feeding fledged young there during June and August, 1947 (R.M.G.). A nest with five eggs found in the same locality, 28 May, 1949 (R.M.G.).

cinerea cinerea Tunst.—GREY WAGTAIL. R. Not common. Frequents the moorland streams, but is decreasing. Two nests with eggs found during 1949 (A.J.W.).

alba yarrellii Gould—PIED WAGTAIL. S.V. Common. Local breeding birds leave in the autumn, but records have been made throughout the winter months.

alba alba L.—WHITE WAGTAIL. P.M. Rare. Probably occurs more frequently than is recorded.

CERTHIIDAE.

CERTHIA Linnaeus

familiaris britannica Ridgw.—BRITISH TREE-CREEPER. R. Not common ; breeding only in the larger woods.

SITTIDAE

SITTA Linnaeus

europaea affinis Blyth—BRITISH NUTHATCH. R. Rare. First recorded in 1931, a pair nesting at Thornton-le-Dale. Not recorded again until 1946, when a pair again bred at Thornton-le-Dale. This pair was also successful in 1947, but in 1948 the male was killed before the eggs had hatched, the female soon after leaving the area (R.M.G.). Two pairs nested during 1949, one rearing a brood, the eggs of the other pair proving unfertile (R.M.G.).

PARIDAE

PARUS Linnaeus

major newtoni Praz.—BRITISH GREAT TIT. R. Common.

caeruleus obscurus Praz.—BRITISH BLUE TIT. R. Very Common.

The commonest species of tit in the district. In 1935, a pair nested in the top of an inhabited bee hive. The nest was placed in one corner, but the whole of the roof was filled with moss (E.A.W.).

ater britannicus Sharpe & Dress.—BRITISH COAL-TIT. R. Not common. Is mainly confined to the woodland areas.

palustris dresseri Stejn.—BRITISH MARSH-TIT. R. Not common. Also keeps to the woodlands, though recorded on the Wolds in Dec., 1946 (A.J.W.).

atricapillus kleinschmidtii Hellm.—BRITISH WILLOW-TIT. Rare. First recorded at Scarborough in 1926 (W.J.C.) ; H. F. Witherby recorded some at Forge Valley in 1935, and H. G. Alexander has records for Staintondale in 1936. Recorded regularly at Thornton-le-Dale, where it nested in 1938 and 1939 (R.M.G.).

AEGITHALOS Hermann

caudatus rosaceus Math.—BRITISH LONG-TAILED TIT. R. Not common. Subject to seasonal variations dependent upon the weather conditions during the winter months.

LANIDAE

LANUS Linnaeus

excubitor excubitor L.—GREAT GREY SHRIKE. W.V. Irregular visitor, recent records being two at Dalby Warren, Thornton-le-Dale during Nov., 1946, one near Lockton, Dec., 1946—Jan., 1947 (R.M.G.), Cornelian Bay, 14 Nov., 1949 (M.E.W.), Harwood Dale, 28 Mar., 1950 (R.M.G.), Wheatcroft, 18 Mar., 1953 (M.E.W.), and Harwood Dale, 20 Sep., 1953 (A.J.W.).

senator senator L.—WOODCHAT SHRIKE. Rare vagrant. Three records. Two young birds obtained in the Castle Holmes, Scarborough, in 1860 or 1861, by A. S. Bell (Nel., p. 145). An adult male shot at Hackness, June, 1881 (Zool., 1892, p. 347). One seen at Reighton by G. A. Danford, 9 May, 1903 (Nat., 1903, p. 347).

collurio collurio L.—RED-BACKED SHRIKE. S.V. Very rare. Recorded six times. A pair found nesting on Oliver's Mount, Scarborough, on 3 June, 1889 (W.G.) ; one near the Mere, 15 May, 1889 (T.N.R.) ; a single bird near Scarborough in 1919 (W.J.C.) ; a female on the Racecourse, 21 May, 1933 (E.A.W.) ; one at Ayton, 21 May, 1933 (W.J.C., Nat., 1934, p. 19) ; one at West Ayton, 14 July, 1944 (T.N.R., Nat., 1945, p. 57).

BOMBYCILLIDAE

BOMBYCILLA Vieillot

garrulus garrulus (L.)—WAXWING. W.V. Variable status. Large irruptions occurred in 1903, 1921-22, 1931-32 and 1941. During the winter of 1943-44 an exceptional invasion occurred, and as many as 200 birds stayed a fortnight at Scarborough. The latest record that year was on 22 April, 1944, at Ruston. Some years no records are received, but its occurrence seems to be becoming more regular, and birds have been seen for several years in succession.

MUSCICAPIDAE

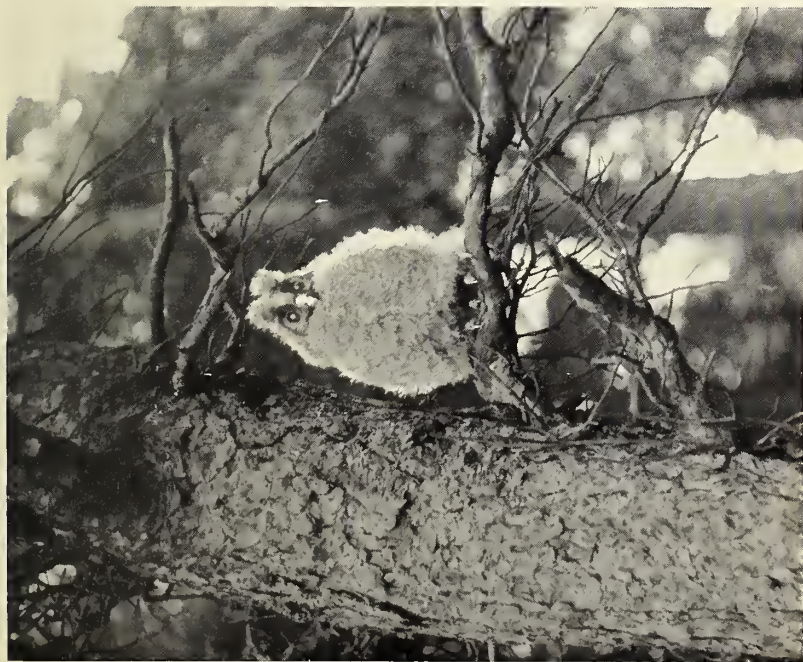
MUSCICAPA Brisson

striata striata (Pall.)—SPOTTED FLYCATCHER. S.V. Common.



REED WARBLER (*Acrocephalus s. scirpaceus* (Hem.))

Photograph : H. H. Farwig



YOUNG LONG-EARED OWL (*Asio otus otus* (L.))

Photograph : E. A. Wallis

Is found generally throughout the district, except on the moorlands. Numbers appear to fluctuate, the species being noticeably more plentiful during 1945 and 1947.

hypoleuca hypoleuca (Pall.)—PIED FLYCATCHER. S.V. Local. Has steadily increased in numbers since about 1925, and is now well established and breeding regularly in local areas of the woods. Has been induced to breed within the last few years by the erection of nesting boxes in some afforested areas where it was formerly unknown (R.M.G.).

parva parva Bechst.—RED-BREASTED FLYCATCHER. Accidental visitor. One record; an immature bird taken on Oliver's Mount, Scarborough, on 23 Oct., 1889, by J. Morley (Nel., p. 152).

REGULIDAE

REGULUS Cuvier

regulus (L.)—GOLDCREST. R. Common. Found chiefly in the fir woods, spreading to afforested areas quite soon after planting. Numbers increase in the autumn, possibly including some Continental birds.

SYLVIIDAE

PHYLLOSOCOPUS Boie

collybita collybita (Vieill.)—CHIFFCHAFF. S.V. Rare. As late as 1926 was recorded as common, but has so decreased that only two or three are recorded each year. One seen at Thornton-le-Dale on 23 and 26 Dec., 1943, was believed to be one of the Northern races (R.M.G.).

trochilus trochilus (L.)—WILLOW-WARBLER. S.V. Abundant. The commonest of all the warblers, being well distributed throughout the district except on the higher moors.

sibilatrix (Bechst.)—WOOD-WARBLER. S.V. Not common. Has decreased from being a common species to one very locally distributed.

LOCUSTELLA Kaup

naevia naevia (Bodd.)—GRASSHOPPER-WARBLER. S.V. Rare. Recorded as very common in 1896, but decreased rapidly afterwards. A pair or two are recorded each year, but it is only rarely proved to breed.

ACROCEPHALUS Naumann

scirpaceus scirpaceus (Herm.)—REED-WARBLER. S.V. Local. After disappearing as a breeding species for many years, three pairs returned in 1929, and the species has bred regularly in one locality every year since.

palustris (Bechst.)—MARSH-WARBLER. S.V. Very rare. Two records; one at Scarborough Mere during the summer of 1928, (A.T.W., T.N.R., Nat., 1929, p. 78); one Throxenby Mere, 29 June, 1933 (T.N.R.).

schoenobaenus (L.)—SEDGE-WARBLER. S.V. Common. Breeds regularly in suitable localities.

SYLVIA Scopoli

borin (Bodd.)—GARDEN-WARBLER. S.V. Common. Breeds regularly in the woods.

atricapilla atricapilla (L.)—BLACKCAP. S.V. Common. Breeds regularly in the woods. One recorded as late as 24 Dec., 1935, at Scarborough Mere (T.N.R., Nat., 1936, p. 35); and as early as 9 March, 1943, at Thornton-le-Dale (R.M.G.).

communis communis Lath.—WHITETHROAT. S.V. Very common.

curraca curraca (L.)—LESSER WHITETHROAT. S.V. Very rare. Last definite breeding record 1929, when a nest with young was found at Cloughton (T.N.R., Nat., 1930, p. 80), but birds were seen carrying food at Cloughton during July, 1953 (R.S.P.).

TURDIDAE**TURDUS** Linnaeus

pilaris L.—FIELDFARE. W.V. and P.M. Common. Large flocks occur regularly on the Marshes during the winter, and a late passage occurs in late April and early May (R.M.G.).

viscivorus viscivorus L.—MISTLE-THRUSH. R. Fairly common. Generally distributed.

ericetorum Turt.—SONG-THRUSH. R. Common. Absent from the high moors. Numbers decrease during the winter, following an increase at the end of September due to immigrant birds. e.g., one ringed as nesting at Noord, Holland, 13 May, 1939, recovered at Pickering, 20 Jan., 1940.

musicus musicus L.—REDWING. W.V. Common. Generally distributed, visiting the town gardens regularly. Suffers severely during hard weather, when numbers can be seen searching for food among seaweed-covered rocks along the tide line. T. Hyde-Parker found a freshly killed bird at Hunmanby on 29 June, 1940, an exceptionally late date.

torquatus torquatus L.—RING-OUZEL. S.V. Rare. Has steadily decreased for many years, and is seen only very locally. A female was seen in a garden in Scarborough on 20 and 21 Feb., 1948 (M.E.).

merula merula L.—BLACKBIRD. R., P.M. and W.V. Very common. The commonest thrush in the district. Numbers increased in the autumn, probably by immigrant birds.

MONTICOLA Boie

saxatilis (L.)—ROCK-THRUSH. One record, a bird near Robin Hood's Bay in June, 1852 (Nel., p. 21).

OENANTHE Vieillot

oenanthe oenanthe (L.)—WHEATEAR. S.V. Not common. Breeds on high ground just below the heather line. Numbers appear to have decreased in recent years. A late bird was recorded near Scarborough on 23 Nov., 1945 (T.N.R.).

oenanthe leucorrhoa (Gm.)—GREENLAND WHEATEAR. P.M. Rare. Possibly overlooked because of the difficulty of identification, but recorded by R.M.G. as follows:—Two males on Wilton Carr,

21 April, 1944 ; one male at Keld Head, Pickering, 8 May, 1942 ; one male at Thornton-le-Dale, 10 May, 1942.

SAXICOLA Bechstein

rubetra (L.)—WHINCHAT. S.V. Although recorded each year, there has been a marked and continuous decrease in the Scarborough area since the early 1930's. Still fairly common among the smaller trees in the Dalby Forest, Thornton-le-Dale (R.M.G.).

torquata hibernans (Hart.)—BRITISH STONECHAT. R. Very rare. As recently as 1938 numbers were increasing, birds breeding in all suitable localities. No records of breeding have been received for several years, and the species is now rarely seen, and then only on passage. Last recorded, one on passage with many other thrushes on Filey Cliffs, 18 Oct., 1953 (A.J.W.).

PHOENICURUS Forster

phoenicurus phoenicurus (L.)—REDSTART. S.V. Common. Breeds in suitably wooded parts of the district.

ochurus gibraltariensis (Gm.)—BLACK REDSTART. W.V. Rare. Odd birds are recorded from time to time, nearly always along the coast. Recent records, one on Castle Cliff, Scarborough, 8 Dec., 1948 (A.J.W., R.M.G.) ; a female on cliff top near Gristhorpe, 17 Jan., 1954 (A.J.W.).

LUSCINIA Forster

megarhyncha megarhyncha Brehm—NIGHTINGALE. S.V. Very rare. Four records ; Oliver's Mount, Scarborough, 10 May, 1882 ; Raincliffe Wood, Scarborough, 18 May, 1896 ; Filey, June, 1897 (Nel., p. 60). In May, 1933, one lived for two or three weeks in Peasholm Glen, Scarborough (T.N.R.).

svecica svecica (L.)—RED-SPOTTED BLUETHROAT. Rare vagrant. An adult visited the garden of W. J. Clarke in Scarborough on 16 Nov., 1925, and at intervals throughout the winter. In 1927, possibly the same bird visited the same garden on several occasions between Feb., and 30 April (W.J.C., Nat., 1926, p. 172). One in Holbeck Gardens, Scarborough, on 21 April, 1954 (G. H. Ainsworth).

svecica cyanecula (Meisn.)—WHITE-SPOTTED BLUETHROAT. Rare vagrant. The first British record ; a female found dead at Seamer, 12 April, 1876 (Hand. Brit. Birds, 1938, Vol. II, p. 198).

ERATHICUS Cuvier

rubecula rubecula (L.)—CONTINENTAL ROBIN. Passage birds moving down the coast, in some years in considerable numbers as in Oct., 1951, are known to include many of the Continental race. (see Yorks. Birds, p. 120).

rubecula melophilus Hart.—BRITISH ROBIN. R. and P.M. Very common.

PRUNELLIDAE

PRUNELLA Vieillot

collaris collaris (Scop.)—ALPINE ACCENTOR. One record, a bird shot at Scarborough during the winter of 1862-3 (Nel., p. 100).

modularis occidentalis (Hart.)—BRITISH HEDGE-SPARROW. R. Common.

TROGLODYTIDAE

TROGLODYTES Vieillot

trogodytes trogodytes (L.)—WREN. R. Common.

CINCLIDAE

CINCLUS Borkhausen

cinclus cinclus (L.)—BLACK-BELLIED DIPPER. One record, a bird taken at Flotmanby, near Filey, 8 Dec., 1875 (Nel., p. 103).

cinclus gularis (Lath.)—BRITISH DIPPER. R. Uncommon. Occurs sparingly on most streams, breeding regularly despite decreasing numbers. A nest is recorded near Scarborough built in a tree six feet above the water (W.J.C., Nat., 1925, p. 22).

HIRUNDINIDAE

HIRUNDO Linnaeus

rustica rustica L.—SWALLOW. S.V. Common. Has decreased considerably, especially in the vicinity of the towns. Two young birds were seen at Scarborough on 22 Nov., 1942 (W.J.C.).

DELICHON Moore

urbica urbica (L.)—HOUSE-MARTIN. S.V. Common. A marked decrease was noted for many years, but it appears to be increasing again. Thirteen nests were counted in 1946 on one building, a site which has been known to carry as many as thirty nests, but was deserted for many years (A.J.W.). Latest record, one at Scarborough, 15 Dec., 1900 (E.A.W.).

RIPARIA Forster

riparia riparia (L.)—SAND-MARTIN. S.V. Local. Colonies of considerable size are to be found in suitable sand and gravel pits, river banks and cliffs.

Order APODIFORMES

APODIDAE

APUS Scopoli

melba melba (L.)—ALPINE SWIFT. Accidental visitor. One at Scarborough, 17 April, 1880 (Nel., p. 265). An exhausted bird picked up on the Spa, Scarborough, 1890 (Nel., p. 265).

apus apus (L.)—SWIFT. S.V. Common. Considerable increase in recent years.

Order CAPRIMULGIFORMES

CAPRIMULGIDAE

CAPRIMULGUS Linnaeus

europaeus europaeus L.—NIGHTJAR. S.V. Not common. Occurs in odd pairs at suitable localities along the edge of the moors. In 1926 a pair nested almost within the Scarborough Borough boundary.

Order CORACIIFORMES

MEROPIDAE

MEROPS Linnaeus

apiaster L.—BEE-EATER. One record, a male caught alive in an exhausted state at Filey, June, 1880 (Nel., p. 283).

UPUPIDAE

UPUPA Linnaeus

epops epops L.—HOOPOE. Casual visitor. One at Scarborough Lighthouse, 1 Nov., 1900 (Capt. Grantham). Adult female shot at Ganton, 3 Nov., 1910 (W.J.C.). One caught on board a trawler off Scarborough, 7 Nov., 1932 (W.J.C.).

CORACIIDAE

CORACIAS Linnaeus

garrulus garrulus L.—ROLLER. Accidental visitor. One killed at Seamer in 1832, and one at Scarborough, 1833 (Nel., pp. 281-2).

ALCEDINIDAE

ALCEDO Linnaeus

atthis ispida L.—KINGFISHER. R. Rare. Found sparingly on the larger streams. Visits the Scarborough Mere in winter, and has been seen along the shore.

Order PICIFORMES

PICIDAE

PICUS Linnaeus

viridis pluvius Hart.—GREEN WOODPECKER. R. Fairly common. Can be found in most wooded areas.

DRYOBATES Boie

major anglicus (Hart.)—BRITISH GREAT SPOTTED WOODPECKER. R. Thinly distributed, but breeds regularly in the larger woods.

minor comminutus (Hart.)—BRITISH LESSER SPOTTED WOODPECKER. Rare. Occasional sight records without proof of breeding, and two definite instances of nesting, a pair near Pickering in 1942 (R.M.G., Nat., 1942, p. 159), and a pair at Thornton-le-Dale in 1953 (R.M.G., Nat., 1954, p. 60).

JYNX Linnaeus

torquilla torquilla L.—WRYNECK. S.V. Very rare. Five records, the most recent being a dead bird found at Cloughton, 13 April, 1947 (H. Alport).

Order CUCULIFORMES

CUCULIDAE

CUCULUS Linnaeus

canorus canorus L.—CUCKOO. S.V. Common. Generally distributed, but more abundant on the Wolds. In 1945 four extraordinarily early records were made in the district, Mr. W. Harland at Scalby and Dr. Robertson at Ayton each saw one on 15 Feb., one came

down exhausted in Scarborough on 15 Mar., and was seen by Mr. J. Morley, and a bird arrived at Staintondale on 27 Mar., being seen daily by Miss M. Lazenby until it began to call on 21 April (see Nat., 1946, p. 63).

COCCYZUS Vieillot

americanus americanus (L.)—YELLOW-BILLED CUCKOO. Accidental visitor. One record, the first for Yorkshire, a bird at Clough-ton from 14-17 Nov., 1953, lived in the garden of Mr. H. Ramsker (Nat., 1954, p. 78).

Order STRIGIFORMES

STRIGIDAE

NYCTEA Stephens

scandiaca (L.)—SNOWY OWL. Accidental visitor. On three occasions it has been, or is supposed to have been, observed in the district. Between the years 1849 and 1853 at Scarborough, at Flamborough on 14 Oct., 1867, and near Scarborough in Dec., 1879 (Nel., pp. 309-310).

BUBO Duméril

bubo bubo (L.)—EAGLE-OWL. Accidental visitor. One record at Scarborough, 30 Oct., 1879 (Nel., p. 314).

AEGOLIUS Kaup

funereus funereus (L.)—TENGMALM'S OWL. Accidental visitor. Six local records are detailed by T. H. Nelson, the latest being one caught at Bickley, 7 Nov., 1901 (Nel., p. 303). There are no recent records.

ATHENE Boie

noctua vidalii Brehm, A. E.—LITTLE OWL. R. Rare. Earliest record for the district was Nov., 1884, a bird being caught on board a trawler off Scarborough (Nat., 1884, p. 336). The species has slowly increased since then, and several records are received each year. It is met with in the Vale of Pickering, where pairs have been seen, and where it undoubtedly breeds (R.M.G.). A nest with four young was found at Ravenscar, 6 July, 1949 (A.J.W.). The species suffered severely during the bad weather of February and March, 1947.

ASIO Brisson

otus otus (L.)—LONG-EARED OWL. R. Rare. In the 1920's was regarded as being fairly common, the species breeding regularly in many of the fir woods. Has decreased enormously and is now decidedly rare, very few breeding records having been received for many years. The last authentic record of a pair nesting is at Wilton, Vale of Pickering, in 1938 (R.M.G.).

flammeus flammeus (Pont.)—SHORT-EARED OWL. W.V. Numbers fluctuate, but is rarely numerous. Has been known to breed occasionally on the moors.

STRIX Linnaeus

aluco sylvatica Shaw—BRITISH TAWNY OWL. R. Fairly common.

Breeds throughout the district, and is well established within the Scarborough Borough boundary.

TYTO Billberg

alba alba (Scop.)—WHITE-BREASTED BARN-OWL. R. Rare. Breeding is recorded but only sparingly.

alba guttata (Brehm)—DARK-BREASTED BARN-OWL. Rare vagrant. Two records; one at Yedingham, 28 Jan., 1939 (T.N.R.); one at Goathland, 14 Oct., 1944 (Brit. Birds, xxxviii., p. 175).

Order FALCONIFORMES

FALCONIDAE

FALCO Linnaeus

rusticolus islandus Bruenn.—ICELAND FALCON. Accidental visitor. One killed on Filey Brigg, 4 Oct., 1864 (Nel., p. 356).

Accidental
lay, 25 Nov.,

ERRATUM

Page 389, Vol. 2, Natural History of the Scarborough District. Under the heading FALCONIDAE entry of "subbuteo subbuteo L." should read as follows.

N. Regular
eding occurred
oton regularly
ist attempt at

subbuteo subbuteo L.—HOBBY. S.V. Very rare.

Some six or seven records the most recent being two at Goathland, 2 August, 1941. (Nat., 1942, p. 103).

e six or seven

one time bred
only occasion-
a birch tree,
; was found in

... a crow's nest in an alder (R.M.G.).

tinnunculus tinnunculus L.—KESTREL. R. Common. Well distributed.

vespertinus vespertinus L.—RED-FOOTED FALCON. Accidental visitor. Recorded at Bempton, 6 July, 1865, and 18 June, 1869 (Nel., p. 368).

ACCIPITRIDAE

AQUILA Brisson

chrysaëtus chrysaëtus (L.)—GOLDEN EAGLE. Accidental visitor. One taken at Hunmanby, 24 July, 1844, and one caught at Helwath, Harwood Dale, in 1850 (Nel., pp. 332-3).

BUTEO Lacépède

lagopus lagopus (Pont.)—ROUGH-LEGGED BUZZARD. Occasional visitor. Usually seen singly, but between 13 Oct., and 7 Nov., 1903, twenty were reported. Last recorded in Forge Valley, 12 to 20 Nov., 1947 (R.M.G., A.J.W.).

buteo buteo (L.)—COMMON BUZZARD. Occasional visitor. Last recorded in 1942, three separate birds being seen during the year.

down exhausted in Scarborough on 15 Mar., and was seen by Mr. J. Morley, and a bird arrived at Staintondale on 27 Mar., being seen daily by Miss M. Lazenby until it began to call on 21 April (see Nat., 1946, p. 63).

COCCYZUS Vieillot

americanus americanus (L.)—YELLOW-BILLED CUCKOO. Accidental visitor. One record, the first for Yorkshire, a bird at Clough-ton from 14-17 Nov., 1953, lived in the garden of Mr. H. Ramsker (Nat., 1954, p. 78).

Order STRIGIFORMES **STRIGIDAE**

NYCTEA Stephens

scandiaca (L.)—SNOWY OWL. Accidental visitor. On three occasions it has been, or is strictly. Between the years borough on 14 Oct., 1 (Nel., pp. 309-310).

BUBO Duméril

bubo bubo (L.)—EAGLE
Scarborough, 30 Oct., 1

AEGOLIUS Kaup

funereus funereus (L.)—
Six local records are de-
scribed at Bickley, 7
recent records.

ATHENE Boie

noctua vidalii Brehm, A.

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ASIO Brisson

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flammeus flammeus (Pont.)—SHORT-EARED OWL. W.V. Numbers fluctuate, but is rarely numerous. Has been known to breed occasionally on the moors.

STRIX Linnaeus

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TYTO Billberg

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Order FALCONIFORMES

FALCONIDAE

FALCO Linnaeus

rusticolus islandus Bruenn.—ICELAND FALCON. Accidental visitor. One killed on Filey Brigg, 4 Oct., 1864 (Nel., p. 356).

rusticolus candicans Gm.—GREENLAND FALCON. Accidental visitor. A mature bird killed near Robin Hood's Bay, 25 Nov., 1854 (Zool., 1885, p. 4558).

peregrinus peregrinus Tunst.—PEREGRINE FALCON. Regular visitor. Single birds are recorded each year. Breeding occurred on Redcliff, Cayton Bay in 1901-2-3, and at Bempton regularly up to 1912, then spasmodically until 1920. The last attempt at breeding there was in 1938 (Yorks. Birds, p. 150).

subbuteo subbuteo L.—HOBBY. S.V. Very rare. Some six or seven breeding there was in 1938 (Yorks. Birds, p. 150). (Nat., 1942, p. 103).

columbarius aesolon Tunst.—MERLIN. R. Rare. At one time bred regularly in known localities on the moors, but is now only occasionally met with. In 1923, a nest was recorded in a birch tree, 14 feet from the ground (E.A.W.); and in 1942, one was found in a crow's nest in an alder (R.M.G.).

tinnunculus tinnunculus L.—KESTREL. R. Common. Well distributed.

vespertinus vespertinus L.—RED-FOOTED FALCON. Accidental visitor. Recorded at Bempton, 6 July, 1865, and 18 June, 1869 (Nel., p. 368).

ACCIPITRIDAE

AQUILA Brisson

chrysaëtus chrysaëtus (L.)—GOLDEN EAGLE. Accidental visitor. One taken at Hunmanby, 24 July, 1844, and one caught at Helwath, Harwood Dale, in 1850 (Nel., pp. 332-3).

BUTEO Lacépède

lagopus lagopus (Pont.)—ROUGH-LEGGED BUZZARD. Occasional visitor. Usually seen singly, but between 13 Oct., and 7 Nov., 1903, twenty were reported. Last recorded in Forge Valley, 12 to 20 Nov., 1947 (R.M.G., A.J.W.).

buteo buteo (L.)—COMMON BUZZARD. Occasional visitor. Last recorded in 1942, three separate birds being seen during the year.

CIRCUS Lacépède

pygargus (L.)—MONTAGU'S HARRIER. S.V. Very rare. Has been known to breed within recent years.

cyaneus cyaneus (L.)—HEN-HARRIER. W.V. Rare. Formerly bred in the district, the latest record being in 1907, from near Thornton-le-Dale (O.G.) ; now occurs at irregular intervals on the moors.

ACCIPITER Brisson

gentilis gentilis (L.)—GOSHAWK. Very rare. One was shot on Filey Brigg, Oct., 1864, and some five others were recorded between 1864 and 1904 (Nel., pp. 339-40).

nisus nisus (L.)—SPARROW-HAWK. R. Fairly common.

MILVUS Lacépède

milvus milvus (L.)—KITE. Accidental visitor. Three birds are recorded as having been taken between 1850 and 1901, the latest being a female caught at Flamborough, 15 Oct., 1901 (Nel., pp. 344 and 345).

HALIAEETUS Savigny

albicilla (L.)—WHITE-TAILED EAGLE. Occasional visitor. In February 1948, one lived on the moors for some three weeks, returning each night to the same roost, and hunting during the day over a wide area including moors and marsh land (R.M.G., M.F.M.M., A.J.W.). Two earlier records refer to a male found dead at Cloughton on 12 Mar., 1942 (W.J.C.), and a bird shot at Bickley on 1 May, 1911 (Nat., 1911, p. 237). Nelson also mentions some four or five other occurrences (Nel., p. 336).

[**leucocephalus** (L.)—AMERICAN BALD EAGLE. A bird in the Scarborough Natural History Museum which P. A. Clancey identified as a specimen of the American Bald Eagle though labelled as a White-tailed Eagle was connected by Mr. Clancey with the bird recorded as trapped at Long Pain, Bee Dale in 1865 (Nel., pp. 336-37). There is still some doubt if the bird is the same as the one referred to by Nelson as it was presented to the Museum by Mr. E. P. Brett, whereas the bird of 1865 was set up for Lady Downe and no transference of ownership to Mr. Brett can be traced.]

PERNIS Cuvier

apivorus apivorus (L.)—HONEY-BUZZARD. Accidental visitor. Two records, a bird shot on Seamer Moor, June, 1902 (W.J.C.), a dead bird found on Filey Sands on 7 Mar., 1929 (Nat., 1929, p. 174).

PANDIONIDAE**PANDION** Savigny

haliaetus haliaetus (L.)—OSPREY. Accidental visitor. One frequented Scarborough Mere from May 10 to 17, 1900 (T.N.R.) ; one at Scarborough Mere, 30 April, 1924, and one, possibly the same bird, was seen at Hackness Pond the following week (Nat., 1924, p. 210 and 1925, p. 22).

Order CICONIIFORMES

CICONIIDAE

CICONIA Brisson

ciconia ciconia (L.)—WHITE STORK. One record, a bird found dead floating in the sea at Scarborough on 8 April, 1888 (Nel., p. 405).

THRESKIORNITHIDAE

PLEGADIS Kaup

falcinellus falcinellus (L.)—GLOSSY IBIS. Accidental visitor. Three records. An immature bird caught at Filey, 1863 (Nel., p. 406), one shot and two others seen at Hunmanby, 15 Oct., 1909 (E. Milford, Field, 6 Nov., 1909), and an adult shot at Cloughton, April, 1916 (W.J.C.).

ARDEIDAE

ARDEA Linnaeus

cinerea cinerea L.—COMMON HERON. R. Scarce. The nearest heronry is just outside the district. Chiefly seen on the Carrs and occasionally on the sea shore.

purpurea purpurea L.—PURPLE HERON. One record, a bird shot at Flamborough in 1833 (Nel., p. 391).

IXOBRYCHUS Billberg

minutus minutus (L.)—LITTLE BITTERN. Accidental visitor. Four records. Single birds at Scarborough Mere, Aug., 1863; Scalby Beck, 25 Feb., 1879; Filey, 27 Dec., 1879; and near Scarborough, 7 Jan., 1902 (Nel., pp. 397-8).

BOTAURUS Stephens

stellaris stellaris (L.)—BITTERN. W.V. Rare. Odd birds occur at infrequent intervals. Last recorded at Seamer 13 Jan., 1938 (Nat., 1939, p. 14). An adult was found alive in the Cemetery, Scarborough, on 24 Dec., 1936, and lived for some days at the Mere before disappearing (Nat., 1937, p. 54).

Order ANSERIFORMES

ANATIDAE

CYGNUS Bechstein

cygnus (L.)—WHOOPE SWAN. W.V. Rare. Small parties seen on migration fairly regularly on the Carrs (R.M.G.).

bewickii bewickii Yarr.—BEWICK'S SWAN. W.V. and P.M. Small parties, and sometimes very large flocks, seen regularly on migration (R.M.G.).

olor (Gm.)—MUTE SWAN. R. and W.V. Occurs regularly in the district, some birds probably being truly wild. All known breeding pairs are semi-domesticated.

ANSER Brisson

anser anser (L.)—GREY LAG-GOOSE. W.V. Occurs very rarely.

albifrons albifrons (Scop.)—WHITE-FRONTED GOOSE. W.V. and P.M. Flocks seen on migration crossing the Carrs, chiefly in the late autumn. Not recorded in every year, being spasmodic in its occurrence.

fabalis fabalis (Lath.)—BEAN-GOOSE. P.M. Occurs rarely, chiefly along the coast. Last record, a dead bird on the South Sands, Scarborough, 6 Mar., 1940 (W.J.C., Nat., 1941, p. 93).

fabalis brachyrhynchus Baill.—PINK-FOOTED GOOSE. P.M. and W.V. The commonest of the geese seen in the district. The first to arrive, the chief line of flight apparently being across the moors from Teesmouth or Solway, in a direct line to the Humber.

BRANTA Scopoli

leucopsis (Bechst.)—BARNACLE-GOOSE. P. M. and W.V. Very rare.

bernicle bernicle (L.)—DARK-BREASTED BRENT GOOSE. P.M.

bernicle hrota (Muell.)—PALE-BREASTED BRENT GOOSE. P.M. Both sub-species have been recorded, though the occurrence is very irregular. A considerable migration was recorded during Nov., 1920 (W.J.C., Nat., 1921, p. 25).

canadensis canadensis (L.)—CANADA GOOSE. Very rare. Two records. One at Scalby Ness, 22 May, 1904 (W.J.C.) ; one on the Ellerburn pond, 9 April, 1949 (R.M.G.).

TADORNA Boie

tadorna (L.)—SHELD-DUCK. P.M. Rare. Does not breed within the district. Small flocks and odd birds seen occasionally along the coast, and more rarely during floods inland.

ANAS Linnaeus

platyrhyncha platyrhyncha L.—MALLARD. R. and W.V. Common.

Numbers greatly increased during winter, a few remaining to breed.

strepera L.—GADWALL. W.V. Very rare. Last recorded on Scarborough Mere, 13 Nov., 1945 (T.N.R.).

crecca crecca L.—TEAL. R. and W.V. Common on the Marishes in winter. Breeds sparingly within the district.

crecca carolinensis Gm.—GREEN-WINGED TEAL. One record, a bird shot at Scarborough, Nov., 1851 (Nel., p. 456).

querquedula L.—GARGANEY. P.M. Rare. Last record three males and one female seen on the Marishes, 14 Mar., 1948 (R.M.G.).

penelope L.—WIGEON. W.V. Common. Flocks seen regularly along the coast, and the species is very numerous during the winter months on flooded land in the Vale of Pickering.

acuta acuta L.—PINTAIL. W.V. Rare. Occurs on the Marishes fairly regularly, usually during the spring migration (R.M.G.).

SPATULA Boie

clypeata (L.)—SHOVELER. W.V. Seen regularly on the Marishes during the winter months (R.M.G.).

AYTHYA Boie

ferina (L.)—COMMON POCHARD. W.V. Uncommon. Irregular in its occurrence, but a few often seen on winter floods in the Vale of Pickering. Formerly nested at Scarborough Mere (Nel., p. 462), and a brood was reared on Throxenby Mere in 1936 (W.J.C.).



PINTAIL (*Anas acuta acuta* L.) Male and Female

Photograph : J. V. Beer

fuligula (L.)—TUFTED DUCK. W.V. Uncommon. Occurs irregularly along the coast and in the Vale of Pickering during times of flooding.

marila marila (L.)—SCAUP-DUCK. W.V. Uncommon. Small flocks seen each year along the coast. In very hard weather numbers are considerably increased. During Feb. and Mar., 1947, flocks of 200-300 birds were seen regularly in the North Bay, Scarborough (A.J.W.). Occasionally seen inland on the Marishes (R.M.G.).

BUCEPHALA Baird

clangula clangula (L.)—GOLDENEYE. W.V. Not common. Odd birds and small parties seen fairly regularly along the coast and on the Marishes.

CLANGULA Leach

hyemalis (L.)—LONG-TAILED DUCK. W.V. Rare. Majority of records are of birds seen in Scarborough Harbour during stormy weather.

HISTRIONICUS Lesson

histrionicus histrionicus (L.)—HARLEQUIN-DUCK. Accidental visitor. One found dead at Filey, 1862 (Nel., p. 474., and Hand. Brit. Birds, 1938, Vol. 3, p. 326).

POLYSTICTA Eyton

stelleri (Pall.)—STELLER'S EIDER. Accidental visitor. Young male shot off Filey Brigg, 15 Aug., 1845 (Nel., p. 476, and Hand. Brit. Birds, 1938, Vol. 3, p. 332).

SOMATERIA Leach

mollissima mollissima (L.)—COMMON EIDER. Rare. Surprisingly few records have been made.

MELANITTA Boie

nigra nigra (L.)—COMMON SCOTER. W.V. Common along the coast, often being driven to shelter in the harbours and bays during hard weather.

fusca fusca (L.)—VELVET SCOTER. W.V. and P.M. Rare. Occasionally seen along the coast, but does not appear to remain long in one locality.

MERGUS Linnaeus

merganser merganser L.—GOOSANDER. W.V. Not common. Odd birds seen on suitable lakes and along the coast. Occasional inland on the River Derwent at Marishes.

serrator L.—RED-BREASTED MERGANSER. W.V. Rare. Chiefly immature birds recorded. Has not been recorded inland. Last records, a pair of adult birds off Filey Brigg, 21 Nov., 1948 (A.J.W.), and four in Scarborough Harbour from 13-28 Feb., 1954 (A.J.W.).

albellus L.—SMEW. W.V. Rare. Very few records. A female lived at Scarborough Mere from 16 to 21 Feb., 1947 (A.J.W., R.M.G.), and a female on Peasholm Lake, Scarborough, on 7 Mar., 1954 (A.J.W.).

Order PELECANIFORMES

PHALACROCORACIDAE

PHALACROCORAX Brisson

carbo carbo (L.)—CORMORANT. R. Common. Well established colonies nest each year on the cliffs at Ravenscar and Gristhorpe, and odd pairs breed sporadically at Bempton.

aristotelis aristotelis (L.)—SHAG. W.V. Not common. Odd birds usually seen. Small parties seek shelter in Scarborough Harbour during stormy weather. Can be seen off Bempton Cliffs as late as April and early May, and during the past three years birds have remained throughout the summer. Breeding has been suspected because of the behaviour of these birds, but has not been proved conclusively.

SULIDAE

SULA Brisson

bassana (L.)—GANNET. R. and P.M. Not common. First nested at Bempton in 1927, and has done so more or less regularly since. Young were seen in the nest, 12 July, 1938 (R.M.G.). In 1948 the climbers reported three nests of which one had an egg, but only five adults were frequenting the cliffs (E.A.W.). There were still five birds present during 1949, one pair being successful in rearing a young one (A.J.W.). In 1950 no young were observed but in 1951 one, possibly two, young were reared. Three young were successfully reared in 1952, and again in 1953 (A.J.W.).

Order PROCELLARIIFORMES

HYDROBATIDAE

HYDROBATES Boie

pelagicus (L.)—STORM-PETREL. W.V. Rare. Occasionally seen along the coast, usually during high winds.

OCEANODROMA Reichenbach

leucorrhoa leucorrhoa (Vieill.)—LEACH'S FORK-TAILED PETREL. Accidental visitor. Four records. A female at Flamborough, Dec., 1883 (Nel., p. 751); two seen in the North Bay, Scarborough, 13 Nov., 1901 (W.J.C.); single birds shot at Flamborough in Oct., 1908 (W. Hewitt, Yorks. Birds, p. 208); and two found dead near Pickering during the wreck of Oct., 1952, both having, presumably, been blown over the Pennines from the west coast (R.M.G.).

PROCELLARIIDAE

PUFFINUS Brisson

puffinus puffinus (Bruenn.)—MANX SHEARWATER. P.M. Rare. Seen only occasionally, usually during the autumn. Latest records, two about three miles offshore from Cloughton Wyke, 18 Aug., 1949 (E.O.W.); one off Filey Brigg, 18 Sept., 1949; 3 Sept., 1950, and 26 July, 1952 (A.J.W.).

puffinus mauretanicus Lowe—BALEARIC SHEARWATER. Accidental visitor. Recorded several times between 1890 and 1900. No

recent records. See Nel., p. 761., and Hand. Brit. Birds, 1938, Vol. 4, p. 47.

gravis (O'Reilly)—**GREAT SHEARWATER**. W.V. Rare. Autumn and winter visitor of uncertain occurrence. Seen more frequently off Flamborough Head than elsewhere (Nel., p. 752 et seq.).

griseus (Gm.)—**SOOTY SHEARWATER**. W.V. Rare. Recorded irregularly, though probably occurs fairly frequently (Nel., p. 755 et seq.).

BULWERIA Bonaparte

bulwerii (Jard. & Selby)—**BULWER'S PETREL**. Accidental visitor. One record, a bird found dead near Scarborough, 28 Feb., 1908 (W.E.C., Nat., 1922, p. 128).

FULMARUS Stephens

glacialis (L.)—**FULMAR PETREL**. R. Common. Before 1919, when three birds were recorded frequenting Speeton Cliffs, was only occasionally seen out to sea by fishermen. By 1922, fifteen to twenty pairs were recorded from Bempton and eggs were taken by the climbers. Since then the bird has spread northwards along the cliffs within the district, and now breeds on most suitable cliff faces. By 1938 over one hundred pairs were counted at Bempton (Nat., 1939, p. 15). During the summer of 1949 young birds unable to fly were seen on the Cliffs at Cloughton Wyke; Castle Cliff, Scarborough; Red Cliff, Cayton Bay; Mell Casty Cliff and Pudding Hole, Gristhorpe and on the Speeton and Bempton Cliffs (A.J.W.). On 4 May, 1942, two were seen being mobbed by Rooks at Thornton-le-Dale, fourteen miles from the coast (R.M.G., Nat., 1943, p. 50.)

Order PODICIPITIFORMES **PODICIPITIDAE**

PODICEPS Latham

cristatus cristatus (L.)—**GREAT CRESTED GREBE**. W.V. Rare. Does not breed in the district, occurring irregularly during the winter on the sea and larger ponds near the coast. One record only from inland, one seen at Marishes, 28 Sept., 1946 (R.M.G.).

griseigena griseigena (Bodd.)—**RED-NECKED GREBE**. W.V. Rare. An infrequent visitor, usually odd birds being recorded, chiefly along the coast, but occasionally inland.

auritus (L.)—**SLAVONIAN GREBE**. W.V. Rare. Single birds seen along the coast during hard weather. Has not been recorded inland. During Feb. and Mar., 1947, several were recorded within the neighbourhood of Scarborough.

nigricollis nigricollis Brehm—**BLACK-NECKED GREBE**. W.V. Rare. Recorded some five or six times. Latest records are one in Scarborough Harbour, 30 Jan., 1939 (T.N.R.); one on the Marishes, 16 Jan., 1939 (R.M.G.); one in the South Bay, Scarborough, 2 Jan., 1950 (A.J.W.).

ruficollis ruficollis (Pall.)—**LITTLE GREBE**. R. Not common. Breeds regularly in one or two suitable localities.

Order COLYMBIFORMES

COLYMBIDAE

COLYMBUS Linnaeus

immer Bruenn.—GREAT NORTHERN DIVER. W.V. Rare. Five or six records. Latest records, a bird lived in and about the harbour from 16 to 31 Dec., 1949 (R.M.G., A.J.W., E.A.W.), and two in Filey Bay on 12 Feb., 1950 (A.J.W.).

adamsii Gray—WHITE-BILLED NORTHERN DIVER. Accidental visitor. Three records. One shot from Filey Brigg in Jan., 1887 (Nel., p. 734) ; one seen in Scarborough Harbour, 1 and 2 Mar., 1916 (W.J.C., Nat., 1916, p. 218) ; and one found dead on Scarborough sands by E. Sigston on 30 Jan., 1952 (Nat., 1952, p. 105).

arcticus arcticus L.—BLACK-THROATED DIVER. W.V. Rare. Five or six records. Occasional inland.

stellatus Pont.—RED-THROATED DIVER. W.V. Not uncommon. Single birds occur each year along the coast, often seeking shelter in Scarborough Harbour. During Feb., 1947, three spent a week in the harbour (A.J.W.). Very few records from inland waters.

Order COLUMBIFORMES

COLUMBIDAE

COLUMBA Linnaeus

palumbus palumbus L.—WOOD-PIGEON. R. and W.V. Very common. Generally distributed, being absent only on the higher moorlands.

aenas L.—STOCK-DOVE. R. Fairly common. Locally distributed, but well established.

livia livia Gm.—ROCK-DOVE. R. Breeds on Speeton and Bempton Cliffs. Due to incursion of domestic pigeons a mixture of the two occurs, but it is doubtful if the statement in the Handbook that the wild type predominates is true (A.J.W.).

STREPTOPELIA Bonaparte

turtur turtur (L.)—TURTLE-DOVE. S.V. Fairly common. Recorded in 1897 on migration only. First recorded nesting in 1900 (Nel., p. 497). Has increased as a nesting species since, breeding in considerable numbers on the Wolds, and is spreading northwards to the afforested areas to the west and north of Scarborough.

orientalis orientalis (Lath.)—EASTERN RUFOUS TURTLE-DOVE. Accidental visitor. The first British record, a bird shot at White Nab, Scarborough, 23 Oct., 1889, (Nel., p. 498, and Hand. Brit. Birds, 1938, Vol. 4, p. 145).

PTEROCLIDAE

SYRRHAPTES Illiger

paradoxus (Pall.)—PALLAS'S SAND-GROUSE. Accidental visitor. Two or three flocks were seen in the Scarborough district during the irruption of May and June, 1888 (Nel., pp. 499-503).

Order CHARADRIIFORMES
SCOLOPACIDAE

LIMOSA Brisson

lapponica lapponica (L.)—BAR-TAILED GODWIT. P.M. Not common. Single birds recorded along the coast at irregular intervals, but only one record inland, three at Marishes, 1 Oct., 1946 (R.M.G.).

limosa limosa (L.)—BLACK-TAILED GODWIT. P.M. Very rare. Two records, a bird shot on the Carrs, Sept., 1923 (W.J.C.), and a flock of 46-48 at Marishes, 26 April, 1947 (R.M.G.).

NUMENIUS Brisson

arquata arquata (L.)—COMMON CURLEW. R. and P.M. Fairly common. Breeds regularly on the moors, though numbers have decreased owing to military and forestry activities. Also nests on the Carrs. Frequents the shore throughout the winter, numbers being greatly increased by passage migrants.

phaeopus phaeopus (L.)—WHIMBREL. P.M. Uncommon. Small numbers recorded on passage each year, chiefly in flight at night.

SCOLOPAX Linnaeus

rusticola L.—WOODCOCK. R. and W.V. Fairly common. Breeds regularly in wooded parts. Numbers increased during hard weather. In Feb. and Mar., 1947, birds were seen regularly in the town gardens (A.J.W.).

CAPELLA Frenzel

media (Lath.)—GREAT SNIPE. Accidental visitor. No definite records since the bird shot at Scampston on 18 Sept., 1884, mentioned by the late W. H. St. Quintin (Yorks. Birds, p. 236).

gallinago gallinago (L.)—COMMON SNIPE. R. and W.V. Breeds regularly on the Carrs and moors. Numbers considerably increased in the winter.

LYMNOCRYPTES Boie

minimus (Bruenn.)—JACK SNIPE. W.V. Scarce. Regular in late autumn at Keld Head, Pickering, but recorded irregularly elsewhere, probably being overlooked.

PHALAROPUS Brisson

fulicarius (L.)—GREY PHALAROPE. W.V. Rare. Recorded at infrequent intervals. One in North Bay, Scarborough, 2 Feb., 1940 (Nat., 1941, p. 94), the most recent being one in Filey Bay, 31 Oct., 1954 (A.J.W.).

lobatus (L.)—RED-NECKED PHALAROPE. Accidental visitor. One record, an adult male shot in North Bay, Scarborough, 10 Oct., 1892 (W.J.C.).

ARENARIA Brisson

interpres interpres (L.)—TURNSTONE. P.M. Fairly common. Small flocks or single birds recorded regularly along the coast. Chiefly immature birds.

CALIDRIS Anonymous

canutus canutus (L.)—KNOT. P.M. and W.V. Common. Flocks of up to one hundred birds seen regularly along the coast. Rarely seen inland.

alpina schinzii (Brehm)—SOUTHERN DUNLIN.

alpina alpina (L.)—NORTHERN DUNLIN. A regular visitor on migration, though the large flocks seen by observers forty years ago no longer occur. Local records do not specify sub-species, but it is assumed that both occur.

testacea (Pall.)—CURLEW-SANDPIPER. P.M. Rare. Apparently oversteps the district on migration. Has been recorded only four times, the most recent being six at Filey, 11 Sept., 1948 (E.A.W.). Recorded once inland at Marishes, 1 Oct., 1946 (R.M.G.).

minuta (Leisl.)—LITTLE STINT. P.M. Very rare. Four records, one in the North Bay, Scarborough, 19 Sept., 1899 (W.J.C.), and one at Marishes, 1 Oct., 1946 (R.M.G.), and single birds on Filey Brigg, 18 Sept., 1949, and 30 Aug., 1953 (A.J.W.). Doubtless other birds have been overlooked and not recorded.

melanotos (Vieill.)—AMERICAN PECTORAL SANDPIPER. One record, a bird at Filey in 1854 (F. O. Morris's British Birds, Vol. IV, p. 316).

maritima maritima (Bruenn.)—PURPLE SANDPIPER. P.M. and W.V. Fairly common. Occurs regularly every year, small flocks winter in suitable localities.

CROCETHIA Billberg

alba (Pall.)—SANDERLING. W.V. Fairly common. Seen regularly along the coast, usually singly or in small flocks.

PHILOMACHUS Anonymous

pugnax (L.)—RUFF. P.M. Rare. Occasionally seen on the Marishes. Last record, up to twenty during an unusual period of flooding from 22—31 Aug., 1954 (R.M.G.), and two at Staxton on 22 Aug., 1954 (A.J.W.).

ACTITIS Illiger

hypoleucos (L.)—COMMON SANDPIPER. S.V. Not common. Breeds regularly, but numbers are decreasing rapidly.

TRINGA Linnaeus

glareola L.—WOOD-SANDPIPER. P.M. Very rare. Three on marshy ground near Staxton, 22 Aug., 1954 (A.J.W.), and three or four beside floods at Marishes from 22 Aug.—5 Sept., 1954 (R.M.G.). The first records for the district.

ochropus L.—GREEN SANDPIPER. P.M. and W.V. Not common. Recorded regularly from the Carrs during the first week in August, usually as single birds. A flock of seven seen at Ganton, 2 Aug., 1948 (E.A.W., A.J.W.). Up to twenty together near Staxton on 22 Aug., 1954 (A.J.W.).

totanus britannica Math.—BRITISH REDSHANK. R. and P.M. Not common. Breeds regularly in small numbers. Some birds stay through the winter, chiefly along the coast.

erythropus (Pall.)—SPOTTED REDSHANK. P.M. Very rare. One record, a single bird at Marishes during a period of unusual flooding, 28—31 Aug., 1954 (R.M.G., A.J.W.).

nebularia (Gunn.)—GREENSHANK. P.M. Very rare. Recent records, one seen on Flixton Carrs, 1 May, 1941 (T.N.R.) ; one seen at Keld Head, Pickering, 3 Sept., 1943 (R.M.G.) ; at Staxton on marshy ground, two on 21 Aug., and five on 22 Aug., 1954 (A.J.W.) ; one at Marishes 28—31 Aug., 1954 (R.M.G.).

CHARADRIIDAE

CHARADRIUS Linnaeus

hiaticula hiaticula L.—RINGED PLOVER. P.M. Fairly common. Small numbers seen regularly on passage along the coast. Does not breed within the district.

LEUCOPOLIUS Bonaparte

alexandrinus alexandrinus (L.)—KENTISH PLOVER. Accidental visitor. One record, two immature birds shot in Cayton Bay, 12 Sept., 1891 (W.J.C.).

PLUVIALIS Brisson

apricaria apricaria (L.)—SOUTHERN GOLDEN PLOVER. R. and W.V. Breeds sparingly on the moors. Numbers greatly increased in the autumn, probably including birds of sub-species *altifrons*, though no definite records have been made. Throughout the winter large flocks frequent the Carrs, often numbering several hundred birds.

SQUATAROLA Cuvier

squatarola (L.)—GREY PLOVER. P.M. Rare. Odd birds or small parties seen at infrequent intervals along the coast. Last record, three, Scarborough Harbour, 30 Jan., 1954 (A.J.W.).

EUDROMIAS Brehm

morinellus (L.)—DOTTEREL. P.M. Very rare. In the early part of last century large numbers were shot on the Wolds during the spring passage. Is now very rarely seen, the last record being a flock of about one hundred frequenting the Wolds near Bempton, from 11 to 18 June, 1907 (E.W.W.).

VANELLUS Brisson

vanellus (L.)—LAPWING. R. and W.V. As a resident species the numbers breeding regularly are decreasing at an alarming rate. Large flocks of immigrant birds spend the winter in the district.

RECURVIROSTRA Linnaeus

avosetta L.—AVOCET. Accidental visitor. One record, two seen near Flamborough Lighthouse for several days during April, 1893 (Nel., p. 590).

HAEMATOPUS Linnaeus

ostralegus occidentalis Neum.—BRITISH OYSTER-CATCHER. W.V. and P.M. Has increased during the past few years. May be seen along the coast in small numbers throughout the year. Does not breed within the district.

GLAREOLIDAE

GLAREOLA Brisson

pratricula pratricula (L.)—PRATINCOLE. Accidental visitor. One record, one killed on Staxton Wold, May, 1844 (Nel., p. 565).

BURHINIDAE

BURHINUS Illiger

oedictes oedictes (L.)—STONE-CURLEW. S.V. Nested regularly in one locality up to 1937. Odd birds still present 1938 and 1939, though breeding not proved (Hand. Brit. Birds, 1938, Vol., 4, p. 434). No records have been received since.

OTIDIDAE

OTIS Linnaeus

tarda tarda L.—GREAT BUSTARD. Very rare vagrant. At one time was common on the Wolds, becoming extinct as a resident during the early 1830's. The last record is believed to have been one seen at Foxholes during 1835 (Nel., pp. 548-557). The only known Yorkshire egg is in the Scarborough Museum.

tetrax L.—LITTLE BUSTARD. Very rare vagrant. Three records, the most recent being a pair at Allerston Marishes, Oct., 1886 (Nel., p. 558).

GRUIDAE

GRUS Pallas

grus grus (L.)—COMMON CRANE. One record, a juvenile bird shot at Flamborough in Feb., 1892 (Nat., 1893, p. 203).

LARIDAE

CHLIDONIAS Rafinesque

niger niger (L.)—BLACK TERN. Rare vagrant. Recorded three times, one at Scalby in 1863 (Nel., p. 655), an adult shot at Osgodby, April, 1901 (W.J.C.), and three juveniles in Jackson's Bay, Scarborough on 7 Sept., 1952 (A.J.W.).

leucopterus (Temm.)—WHITE-WINGED BLACK TERN. Very rare vagrant. Three records, the most recent a bird shot at Scarborough, 26 Sept., 1896 (Nel., p. 650).

HYDROPROGNE Kaup

caspia (Pall.)—CASPIAN TERN. Very rare vagrant. One record, a bird shot at Filey, Sept., 1874 (Nel., p. 652).

STERNA Linnaeus

sandvicensis sandvicensis Lath.—SANDWICH TERN. P.M. Common. Common along the coast during August and September, apparently as part of the spread of the species from its breeding haunts prior to the actual passage south.

hirundo hirundo L.—COMMON TERN. P.M. Not common. Chiefly seen during the autumn passage.

macrura Naum.—ARCTIC TERN. P.M. Fairly common. Can be seen regularly during August and September, prior to its passage to the south.



STONE CURLEW (*Burhinus o. oedicnemus* (L.))

Photograph : Ralph Chislett, F.R.P.S.

facing page 400

albifrons albifrons Pall.—LITTLE TERN. P.M. Rare. Surprisingly few records.

XEMA Leach

sabini (Sab.)—SABINE'S GULL. W.V. Very rare. Mainly immature birds recorded, the most recent being one shot at Scarborough, 6 Oct., 1908 (W.J.C.), an adult shot at Bempton on 10 Oct., 1910 (Yorks. Birds, p. 283), and a juvenile first seen by M. Ness at Scalby Mills, Scarborough on 4 Oct., 1952 (E.A.W. & A.J.W.).

LARUS Linnaeus

minutus Pall.—LITTLE GULL. W.V. Rare. Single birds recorded at irregular intervals, birds seldom staying for more than one or two days. Latest records, an immature bird at Scarborough, 1 Feb., 1947 (A.J.W.), and single adult birds in Scarborough Harbour from 5-8 Feb., 1952, and on 6 and 7, Sept., 1952 (A.J.W.).

ridibundus ridibundus L.—BLACK-HEADED GULL. R. and W.V. Common. Breeds at one locality in the district, though very few eggs hatch owing to the depredations of egg thieves. Numbers increased in winter by migratory birds. One recovered at Scarborough, April, 1936, had been ringed at Jinxford, Jutland, July, 1935.

canus canus L.—COMMON GULL. W.V. Very common. Very large flocks winter in the district, spending the daytime inland, returning each night to the coast to roost. Several recoveries have been made of birds ringed in Sweden, Finland, and on Baltic coast.

argentatus argentatus Pont.—HERRING GULL. R. Very common. Breeds in considerable numbers all along the cliffs, where rock faces afford suitable sites. First nested on the Castle Hill, Scarborough, in 1934. Commonly feeds inland during the winter, but seldom in as large flocks as previous species.

fuscus graellsii Brehm—BRITISH LESSER BLACK-BACKED GULL. P.M. Uncommon. Although the species breeds north of the district, it is rarely seen except on spring and autumn passage, and then not in any numbers. Occasionally passes inland in spring across the moors (R.M.G.).

marinus L.—GREAT BLACK-BACKED GULL. W.V. Common. Small flocks are seen regularly throughout the winter, and occasionally large flocks of up to three hundred birds are recorded. Of such a flock seen in Gristhorpe Bay, on 11 Oct., 1947, about half were mature (A.J.W.). Moves inland to flooded areas of the Vale of Pickering, up to fifty seen in 1944-45 (R.M.G.). Odd birds may be seen along the coast throughout the summer.

hyperboreus Gunn.—GLAUCOUS GULL. W.V. Not common. Immature birds recorded regularly during hard weather. Nine immature and one adult recorded on 16 Dec., 1942 (T.N.R.).

glaucoides Mey.—ICELAND GULL. W.V. Rare. Recorded at irregular intervals. Majority of records are of immature birds.

RISSA Stephens

tridactyla tridactyla (L.)—KITTIWAKE. R. Abundant. Large numbers breed along the whole length of the Speeton and Bempton Cliffs, their numbers having increased enormously during the past twenty years. A colony was started on the Castle Hill, Scarborough, during the war, but owing to military restrictions it is not clear in which year breeding was actually commenced. In 1948, between thirty and forty nests were counted (A.J.W.), and the colony has continued to increase. Occasional immature birds are seen during the winter months.

PAGOPHILA Kaup

eburnea (Phipps)—IVORY GULL. Vagrant. Nelson mentions five local records, the most recent being one at Flamborough on 5 April, 1904 (Nel., p. 693). There have been no records since.

STERCORARIIDAE**STERCORARIUS** Brisson

skua skua (Bruenn.)—GREAT SKUA. P.M. Rare. Infrequently recorded as migrations are made chiefly out to sea. The last record is of a bird killed by colliding with wires at Thornton-le-Dale, 14 miles from the coast, during Dec., 1932 (W.J.C., Nat., 1934, p. 20).

pomarinus (Temm.)—POMATORHINE SKUA. P.M. Fairly common at sea. Rarely recorded near the coast except during gales from the east. Large numbers occurred along the coast during 1879, 1880, and 1886 (Nel., p. 696 et seq.).

parasiticus (L.)—ARCTIC SKUA. P.M. Fairly common. Recorded irregularly along the coast.

longicaudus Vieill.—LONG-TAILED SKUA. P.M. Very rare. An irruption occurred along the east coast during Oct., 1879, numbers being recorded at Scarborough. Last recorded, Oct., 1889, an adult killed at Scalby Ness (Nel., pp. 706-7), and two immature birds shot and an adult seen off Flamborough in Oct., 1908 (Yorks. Birds, p. 302).

ALCIDAE**ALCA** Linnaeus

torda britannica Tic.—BRITISH RAZORBILL. R. Common. Breeds in considerable numbers on the Speeton and Bempton Cliffs.

URIA Brisson

aalge aalge (Pont.)—NORTHERN GUILLEMOT. W.V. Not uncommon. Few definite records, possibly owing to difficulty of identification.

aalge albionis With.—SOUTHERN GUILLEMOT. R. Common. Large numbers breed on the Speeton and Bempton Cliffs. The 1938 count of bridled birds showed a percentage of 0.8 present (Hand. Brit. Birds, 1938, Vol. 5, p. 156). A count taken during 1948 and 1949, showed no perceptible increase in this figure (A.J.W.).

[*lomvia lomvia* (L.)—BRUENNICH'S GUILLEMOT. W.V. Recorded four times between 1894 and 1902 (Nel., p. 725). The validity of these records was questioned by R. Wagstaffe, of the Yorkshire Museum, York, and, in the light of his findings, these records can no longer be accepted as correct (North Western Naturalist, Mar. and June, 1945. The Invalidity of some early Records of Bruennich's Guillemot in Britain.)]

grylle grylle (L.)—BLACK GUILLEMOT. W.V. Very rare. Mainly immature birds have been recorded. In 1938 a pair bred at Bempton Cliffs, being seen feeding a young one on 24 July (Nat., 1939, p. 15). Two adults, presumably the above pair, were seen at Filey on 10 Oct., 1938 (Scar. Nat. Records). One was found dead on Filey Brigg on 18 Feb., 1950 (P. A. Clancey), and one was shot near Flamborough about 29 Dec., 1950 (G. J. Brown).

ALLE Link

alle alle (L.)—LITTLE AUK. W.V. Irregular. Occurs usually in small flocks, but occasionally in large numbers, as in 1894 and 1912, when many hundreds were found along the coast in an exhausted condition. In nearly every case, when a bird was examined, no food was found in the stomach (E.A.W.). Is occasionally blown inland, a bird being picked up at Thornton-le-Dale, fourteen miles from the coast, on 19 Nov., 1942 (R.M.G.). Early dates; Scarborough, 9 and 19 Oct., 1921 (W.J.C.); Filey Brigg, 7 Nov., 1948 (A.J.W.).

FRATERCULA Brisson

arctica grabae (Brehm)—SOUTHERN PUFFIN. R. Breeds in considerable numbers on Speeton and Bempton Cliffs, chiefly on the more grassy slopes near the foot of the cliffs. Is rarely seen except during the breeding season.

Order RALLIFORMES

RALLIDAE

CREX Bechstein

crex (L.)—CORN-CRAKE. S.V. Very rare. At the beginning of the century a common and regular breeding species throughout the cultivated parts of the district. Has declined rapidly, and by 1930 was considered rare. Only scattered birds recorded since 1935, and no records have been received since 1942, except one heard calling on 12 May, 1949 at Scarborough and one at Seamer during May, 1951 (A.J.W.).

PORZANA Vieillot

porzana (L.)—SPOTTED CRAKE. P.M. and S.M. Very rare. Infrequently recorded. Since 1897, recorded three times; one caught alive at Scarborough, 2 Nov., 1897 (W.J.C.); an adult male found dead in Holbeck Gardens, Scarborough, 14 Nov., 1906 (W.J.C.); and one dead near Scarborough Mere, 15 May, 1930 (T.N.R.).

parva (Scop.)—LITTLE CRAKE. Vagrant. One record, one caught near Scarborough in 1836 (Nel., p. 538).

RALLUS Linnaeus

aquaticus aquaticus L.—WATER-RAIL. R. and W.V. Rare. Probably occurs regularly, though not always recorded. Only breeding record is a pair which nested near Scalby during 1936-7-8 (T.N.R.). At least three spent the winter of 1946-7 at Scarborough Mere (A.J.W.). Seen during the winter months each year at Keld Head, Pickering (R.M.G.).

GALLINULA Brisson

chloropus chloropus (L.)—MOORHEN. R. Abundant.

FULICA Linnaeus

atra atra L.—COOT. R. and W.V. Not common. Numbers fluctuate, some years many visiting the district during the winter months. Has been known to breed at Scarborough and Throxenby Meres, though the sites are often deserted for many years at a time.

Order GALLIFORMES

TETRAONIDAE

LAGOPUS Brisson

scoticus scoticus (Lath.)—BRITISH RED GROUSE. R. Rare. At one time common. Has been driven from many of its old haunts by afforestation of moorland areas. Is now met with only in scattered localities.

PHASIANIDAE

PHASIANUS Linnaeus

colchicus L.—PHEASANT. R. Common. Has decreased in numbers during recent years, possibly owing to lack of protection.

PERDIX Brisson

perdix perdix (L.)—COMMON PARTRIDGE. R. Very common. Generally distributed, being particularly common on the Wolds.

ALECTORIS Kaup

rufa rufa (L.)—RED-LEGGED PARTRIDGE. R. Common. Has increased considerably during the last fifty years. More frequent on the Wolds than in the north of the district.

COTURNIX Bonnaterre

coturnix coturnix (L.)—QUAIL. S. V. Rare. Is reported as breeding on the Wolds each year, and occasionally from cultivated parts of the Vale of Pickering.

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MAMMALS

F. C. Rimington

Of the 76 species of mammals given in the List of British Vertebrates, British Museum (Natural History), 1935, excluding island forms, 45 have been recorded from the Scarborough district.

Within historical times several other species flourished. It is generally stated that the wolf became extinct in England about the end of the 15th century, but there is a tradition that this animal lingered on in the Yorkshire Wolds. Blaine, in his *Encyclopaedia of Rural Sports*, 1858, p. 105, says that in the parish books of Flixton and Folkton are still to be seen memoranda of payments made for the destruction of wolves which used to breed in the bogs and rushes on the carrs below the villages, coming up at night to destroy great numbers of sheep. Unfortunately such entries in the parish registers can no longer be traced. In Richard II's reign wolves must have been fairly common in the district for in the account rolls of Whitby Abbey for 1394-6 is the following entry of a payment for the dressing of wolf-skins:—

Pro tewing xiiii pellium luporum 10s. ix d.

In Farrer's "*Early Yorkshire Charters*", Vol. II, pp. 468-9, referring to Cal. Pat. Rolls, 1446-52, is a writ of 1448 confirming the foundation in the reign of King Athelstan of the Hospital of St. Mary and St. Andrew at Flixton, for the safety of travellers so that they should not be devoured by wolves and other wild beasts in the woods at that time, i.e., 10th cent. There is no mention in the writ of wolves existing there in 1448, the only dangers mentioned being "waters, bogs and marshes". This hospital was popularly called "*Carmanspital*", possibly a variant of *Carlandspital* (being built near the carrs, drained peaty land) to distinguish it from the nearby hospital of St. Mary at Staxton. Remains of the Flixton hospital can be seen in a field near Park House and its position is indicated as a short bank on the O.S. 6-in. map, just north of the village. According to Hinderwell (*History of Scarborough*, 1811, p. 263) there was a parcel of land in this vicinity called "*Wolfland*", but the name is no longer in use.

Although the remains of the brown bear have been found elsewhere in the North Riding (Harting, *Extinct British Animals*, 1880, p. 13) dating probably from Roman times, there are no reliable records for this animal in our area. An interesting list is contained in "*A Booke of all the oulde Customes used in Pickering lithe time oute memorie and contened to this daie*", Gawaine Bebington, 1622. He catalogues "*Beastes of the forrest, Harte, Hare, Beare, Wolfe; Beastes of the chaise, Bucke, Roe, Fox, Mottrom (Marten ?); Beastes of warraint, Hare, Cony; Fowles of warraint, Phessant, Partridg.*" One suspects this is a list of animals that Bebington considered should exist in a forest worthy of the name rather than an actual record of species to be found in Pickering Forest.

There are very scant records of the wild boar in the Pickering Coucher Book (14th cent.). It contains innumerable instances of the poaching of red, fallow and roe deer and the hare, but no mention of the taking of the boar. In 1306 it is recorded that the Abbot of St. Mary's, York, holds in fee the office of forester on Blakey Moor, and can take all animals excepting the hart, hind, hawk and boar, "which the king's ancestors reserved for themselves and their heirs" (Inq. P.M. 34, Edw. I, No. 162). In 1227, Henry III, writing from Stamford, instructed his huntsmen, Master Guy and John the Fool, to take 20 hinds and 10 pigs for the king's use from his forest of Pickering (N.R.R.S.N.S., Vol. 2, p. 219). This reference to pigs (*porcos* in the original Latin) may refer to the wild boar or, less likely, to the domestic pig, numbers of which were kept in the forest. It is clear that the wild boar was not a common animal.

As late as the 17th century it is recorded (N.R.R.S.N.S., Vol. 2, p. 7) that a ranger received from Scalby and other townships adjoining the moors, half a peck of oats annually per oxgang of land for protecting the poultry against the fox; later the status of this animal had become so precarious that artificial breeding places of brick and drain-pipe were constructed by the hunts on the Wolds, to the eventual confusion of the archaeologist.

The breeding and trapping of rabbits in large warrens was part of the common farming practice in the 18th and early 19th centuries. Tuke (*Agriculture of the North Riding*, 1800, p. 283) mentions a warren recently planted at Lockton containing between 4 and 5 hundred acres, and two others, somewhat larger, at High and Low Dalby, these latter the property of the Duchy of Lancaster. Marshall (*Rural Economy of Yorkshire*, 1788, pp. 232 and 261) considers the rabbit to be "a species of stock nearly three times as valuable as either cattle or sheep". He describes a warren in this district containing 1,800 acres, worth for the purpose of husbandry one shilling per acre, but let as a rabbit warren for £300 per year. Marshall describes in detail the working of rabbit warrens at Coldham (Cottam?) on the Wolds, where "three or four thousand acres of tolerably good land are appropriated principally to rabbits, a circumstance which it would be difficult to equal". When parts of the warren became mossy they were enclosed by a turf wall topped with furze, the surface pared and burnt and the soil broken up for arable crops. Having afforded a succession of corn and turnips the ground was sown with grass and again thrown open to the rabbits. To encourage the animals artificial burrows were bored with an auger and if the soil was thin, loads of earth were brought in from elsewhere and stacked into mounds.

The species bred in these warrens was at first the common grey, but later silver-haired strains were introduced into most warrens. These silver skins were dressed as fur and exported to the East Indies and to China "there to be worn by the principal people". The rabbits were taken in "type-traps", the remains of many of which may still be found on the moors. The type consisted of a pit 5 or 6 feet deep and

lined with stone. It was covered with a floor with a balanced trap-door in the middle ; it was baited with turnips and the trapdoor fastened for several nights. Then it would be loosened and the rabbits taken. Marshall says that 5 or 6 hundred couples were frequently taken at one time, and when two Wold warrens lay together there was once an instance of 1,500 couples being killed at one taking.

It is significant that in the very extensive documents concerning the Forest of Pickering in the 14th, 15th and 16th centuries, there is no mention of the rabbit. All other animals that could be expected to live in a medieval forest are dealt with in detail and the absence of references to the rabbit implies that this animal did not then exist in the forest, which stretched from the River Seven to the sea and which included villages, cultivated land, heaths and moors as well as woodlands.

The chief animals in the forest were of course the deer, red, fallow and roe. The fallow deer were confined to the park of Blansby to the north of Pickering. In the Duchy of Lancaster records (N.R.R.S.N.S., Vol. 1, p. 198) it is said that there were between 400 and 500 fallow deer in the park in 1503. In the mid-16th century there were some 600 deer at Blansby, including 77 bucks (N.R.R.S.N.S., Vol. 1, p. 212), but in a survey of the forest in 1608 it is stated that the stone wall of Blansby Park is decayed in many places and only about 100 deer are left. Later, Norden's Survey of Pickering Forest, 1619-21, reports that the park had recently been replenished with fallow deer, but being unconfined because of the broken wall, they ranged over the adjacent fields (N.R.R.S.N.S., Vol. 1, p. 13).

The different names given in the forest records to deer of various age are of interest :

RED DEER

FALLOW DEER

	HART	HIND	BUCK	DOE
1st year	Calf	Hind Calf	Fawn	Fawn
2nd „	Knobber or Brocket	Hearse or Hyrsel	Pricket	Teg
3rd „	Spayard	Hind	Sorrel	Doe
4th „	Staggart	„	Soar	„
5th „	Stag	„	Buck of 1st Head	„
6th „	Hart of 1st Head	„	Buck of Great Head	„
7th „	Hart of Great Head	„		

In medieval times poaching appears to have been a most popular pastime among all classes. Clerics of high degree, local nobility, yeomen, townsmen and vagrants were regularly indicted for poaching, the red deer being the principal victim. The Duchy of Lancaster records (N.R.R.S., all vols.) show the penalties varied from a fine of 6d. to outlawry ; indeed so very many were outlawed that one doubts the seriousness of the sentence, in many cases the fine appears to be the more serious. Thus on July 4th, 1307, John Humet, John Woodcock,

Thomas Gnatel (a confirmed poacher in trouble before), William Rufait, Roger Heywood, William Cooper, of Scarborough and Roger his lad, were caught taking a stag at Ellerbeck with bows and arrows and six greyhounds. Gnatel as an old offender was fined 6/8, Woodcock was fined 5/-, the rest were outlawed ! (N.R.R.S.N.S., Vol 2, p. 80).

At the Assizes of the Forest held at Pickering in 1334 it was stated that during the few years that Richard Skelton had been keeper of Pickering Castle 180 harts and 200 hinds had been taken irregularly, 18 harts and 24 hinds had been delivered to the Abbot of St. Mary's as tithe and 200 harts and 300 hinds had died of the murrain (N.R.R.S.N.S., Vol. 2, p. 138). In an enquiry into the state of Pickering Forest in 1503 it was recorded that between 200 and 300 red deer were to be found within the forest. To test these numbers the examiners took 8 people with them and suddenly went into the woods. Within two hours 7 or 8 score of red deer were seen (Vol. 1, p. 198). Another survey in the mid-16th century (Vol. 1, p. 212) says "the remanent of the reade deare are vewed to be CCLXIII, whereof mayle deare LIIII ". By 1608 the number appears to have fallen to 15 or 16 stags only and Norden's Survey of 1619-21 records that there are but few red deer left, confined to Newton Dale and to Sir Thomas Posthumus Hoby's woods at Hackness, perhaps one deer for every 5,000 sheep.

The roe deer seems to have been less common ; quite a number were poached and they were sometimes caught in nets (Vol. 3, p. 225). In 1340 Henry de Percy, Lord of the Manor of Seamer, claimed the right to take and chase roe deer within the limits of the forest (Vol. 3, p. 164).

There are many references to dogs in the forest records. Only mastiffs and cur-dogs could be kept in the forest and they must be lawed or maimed. A special claim had to be made to keep greyhounds or spaniels (N.R.R.S.N.S., Vol. 1, p. XXXIII). Manwood in his Treatise on Forest Law, Chap. XVI, describes the operation of lawing. " The mastive being brought to set one of the forefeet upon a piece of wood eight inches thick and a foot square, then one with a mallet setting a chissell of two inches broad upon three claws of the forefeet at one blow doth smite them clean off." The fine for keeping an unlawed dog in the forest was 3/- and when in 1335 the Prior of Bridlington was indicted for keeping unlawed dogs at Scalby, he successfully pleaded the right of the Holy Church to be free of the need to law its hunting dogs (Vol. 3, p. 6). In 1327 there were 135 dogs in the forest, mostly mastiffs and greyhounds hunting by sight and *braches* or running-hounds hunting by scent, the latter somewhat resembling a very heavy foxhound of to-day (Vol. 2, p. XL).

The last recorded specimen of wild cat in Yorkshire was trapped at Marton, near Hawnby in the Hambleton Hills in 1840, but this animal appears to have been quite common in the Pickering Forest. Many records exist of the granting of permission for its hunting, e.g.,

Roger Hardy of Scarborough was allowed to hunt with his hounds for hare, fox, badger and wild cat (Pat. Rolls. 37 Hen. III, m. 10).

The marten was, at the beginning of the present century, a comparative rarity in Britain. Its near-extirpation, as was the case with many other carnivores, was due to its pelt being of considerable value as fur, and to the fact that such animals have for long been regarded as "vermin". Church Wardens' accounts of the 17th and 18th centuries, contain many entries of payments made for the destruction of various species of carnivores. Fortunately, however, the plantation policy of the Forestry Commissioners has provided many new and varied habitats where such rarities as the marten and the polecat may be encouraged to breed.

There was at one time a herd of wild white cattle at Burton Constable. They differed from those at Chillingham in being larger and in having black ears, muzzles and tail-tips instead of red. They had become extinct by 1790 (Harting, *Extinct British Animals*, p. 228).

Many of our mammals have local names: the hedgehog "Pricky-back Otchin", the stoat "Clubster", the weazel "Reazel", the shrew "Blind Mouse", the brown rat "Ratten", the porpoise "Sea-Pig", the white-backed dolphin "Ascus", the white-sided dolphin "Scoutler", the bat "Black-beeraway". The children of Ayton used to sing this charm:—

"Black black-beeraway,
Fly my ear away,
When we bake we'll give you a cake,
When we wash we'll give you a shirt" (E.A.W.).

Abbreviations:—

M.B.—M. Bailey

R.B.C.—R. Barrington-Cooke

W.J.C.—W. J. Clarke

J.C.—J. Cooper

R.M.G.—R. M. Garnett

E.F.G.—E. F. Gilmour

O.G.—Oxley Grabham

G.K.G.—G. K. Green

C.D.H.—C. D. Head

J.S.H.—J. S. Hicks

K.H.—K. Horsefield

T.H-P.—T. Hyde-Parker

E.P.—E. Percival

E.J.R.—E. J. Rimington

T.R.—T. Roberts

P.T.—P. Tissiman

E.A.W.—E. A. Wallis

G.G.W.—G. G. Watson

B.M.—The British Museum (Natural History).

Nat.—The Naturalist.

N.R.R.S.N.S.—The North Riding Record Society Volumes, new series.

V.C.H.—The Victoria County History, Yorkshire.

Square brackets imply that the record occurred just outside our area.

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MAMMALIA

The nomenclature is that of the "List of British Vertebrates", British Museum (Natural History), 1935 : the classification follows that of the "List of British Mammals", British Museum (Natural History), 1952.

INSECTIVORA

TALPA Linnaeus

europaea L.—Common Mole. Common in many districts but not usually on the moors ; unusually abundant in 1938. Specimens of uniformly cream colour taken at Staintondale (W.J.C., 1903).

SOREX Linnaeus

araneus castaneus Jen.—Common Shrew. Generally distributed and common.

minutus L.—Pigmy Shrew. Records in most years, probably not uncommon.

NEOMYS Kaup

fodiens bicolor (Shaw)—Water Shrew. Generally distributed but not common.

ERINACEUS Linnaeus

europaeus L.—Hedgehog. Generally distributed and common. Many records of albino varieties.

CHIROPTERA

MYOTIS Kaup

mystacinus (Kuhl)—Whiskered Bat. Uncommon ; Staxton (C.D.H., 1891) ; Scarborough (O.G., 1903) ; Scarborough Mere (W.J.C., 1924) ; Wood End Museum, Scarborough (E.F.G., 1950).

nattereri (Kuhl)—Natterer's Bat. Odd specimens taken at Thornton-le-Dale (V.C.H.).

daubentonii (Kuhl)—Daubenton's Bat. Only one record, a female found dead at Scarborough Mere, 29 April, 1953 (G.G.W.).

PIPISTRELLUS Kaup

pipistrellus (Schreb.)—Pipistrelle. Common and widely distributed. One taken at Scarborough in 1928 proved to be the largest ever measured by the B.M. staff. Its forearm was 32.5mm., and on its skin were a number of ticks new to Yorkshire.

NYCTALUS Bowdich

noctula (Schreb.)—Noctule or Great Bat. Fairly common at Thornton-le-Dale (R.M.G., 1943). Formerly not uncommon at Scarborough (W.J.C.), but not seen for many years until 1948 when one was recorded at Throxenby Mere (E.J.R.).

PLECOTUS Geoffroy

auritus (L.)—Long-Eared Bat. Generally distributed and fairly common (W.J.C., 1897), no subsequent records until 1951, when three specimens were recorded at Cropton, just outside our area (E.F.G.).

Although some miles outside our area, it is informative to note that Mr. Adam Gordon of Helmsley has taken the following bats in Duncombe Park :—

Rhinolophus hipposideros minutus (Mont.)—Lesser Horseshoe. Occasional.

Myotis mystacinus (Kuhl)—Whiskered. Local.

M. nattereri (Kuhl)—Natterer's. Local.

M. daubentonii (Kuhl)—Daubenton's. Local.

Pipistrellus pipistrellus (Schreb.)—Pipistrelle. Common.

Nyctalus noctula (Schreb.)—Noctule. Two colonies.

Plecotus auritus (L.)—Long-Eared. Common.

Barbastella barbastellus (Schreb.)—Barbastelle. Common and readily taken.

CARNIVORA

VULPES Oken

vulpes crucigera (Bechst.)—Fox. Common, particularly on the cliffs. Occasionally breeds on the Castle Holmes. Melanistic strains not uncommon on the Wolds (J.S.H.).

MELES Brisson

meles meles (L.)—Badger. Quite common, despite persecution. breeds within $1\frac{1}{2}$ miles of Scarborough Station. In 1931 one was captured in the centre of the town. In a recent survey of the Cloughton area over 40 sets were found, many either occupied or in use as travelling sets. Badgers abound in Allerston Forest, there being 15 sets in one part of Gandale alone. They are considered beneficial to the forest economy and are allowed to pass through special badger-gates in the rabbit-proof fences, wooden doors hinged at the top and weighted at the bottom, which a badger can push open but a rabbit cannot (G.K.G.).

LUTRA Brisson

lutra (L.)—Otter. Occasional in River Derwent and larger becks. Lindhead Beck, Scalby (E.J.R., 1947). One visited Peasholm Glen more than once in 1945, eating all the goldfish in the pond. Scarborough Mere, 1948 (E.F.G.).

MARTES Pinel

martes martes (L.)—Pine Marten. Very rare; Levisham (Nat., 1921); Everley (K.H., 1925).

MUSTELA Linnaeus

erminea stabilis Barr.—Ham.—Stoat. Common.

nivalis nivalis L.—Weasel. Fairly common.

putorius putorius L.—Polecat. Rare; Seamer Carrs (W.J.C., 1894); Fylingdales (Nat., 1903); Killerby Hall (J.C., 1939). Five seen Jugger Howe Beck, 25th and 26th June, 1887. (R.B.-C., Field, 1887). In the past many ferrets (*Putorius furo*) have escaped from captivity and interbred with wild polecats. Man has even crossed his ferrets with polecats, producing the coloured "polecat-ferrets", which by pelage colour, size and ferocity could readily be mistaken for the pure-bred polecat.



BADGER (*Meles m. meles* (L.)) Troutdale

Photograph : W. Parkinson

PINNIPEDIA

HALICHOERUS Nilsson

grypus (Fabr.)—Grey Seal. Rare ; Filey Brigg, 1927, male, exhibited alive at Filey for some years. Young male, washed ashore at Cayton Bay, Aug., 1953, preserved and exhibited at Wood End Museum. [Saltwick Bay (T.R., 1913)].

PHOCA Linnaeus

vitulina L.—Common Seal. Not uncommon along the coast, occasionally in the harbour.

LAGOMORPHA

ORYCTOLAGUS Lilljeborg

cuniculus (L.)—Rabbit. Very variable ; abundant in some years, scarce in 1932, 1933, 1937, owing to disease. In 1954 *Myxomatosis* reached the Scarborough area and by the summer of 1955 the rabbit appeared to have been virtually exterminated.

LEPUS Linnaeus

europaeus occidentalis de Wint.—Brown Hare. Generally distributed on cultivated ground. So scarce during the years 1937-41 that many of the usual coursing meetings were abandoned.

RODENTIA

MUSCARDINUS Kaup

avellanarius (L.)—Dormouse. Very rare ; Raincliffe Woods and Langdale End (W.J.C., 1897) ; Barns Cliff (P.T., 1898).

CLETHRIONOMYS Tilesius

glareolus britannicus (Mill.)—Bank Vole. Less common than the Short-Tailed Vole, but not rare in Raincliffe Wood and in hedgerows throughout the district (W.J.C.).

ARVICOLA Lacépède

amphibius amphibius (L.)—Water Vole. Common in suitable situations. Black variety, Cayton Bay (W.J.C.).

MICROTUS Schrenk

agrestis hirtus (Bell.)—Short-Tailed Vole. Normally plentiful ; very scarce in 1931-35, but in 1937-38 so numerous at Ebberston that many Short-Eared Owls gathered to feed on them.

APODEMUS Kaup

sylvaticus sylvaticus (L.)—Long-Tailed Field Mouse. Generally distributed and common.

RATTUS Fitzinger

rattus (L.)—Black Rat. Rare before 1900 but then quickly became the dominant rat at the harbour. Less common since 1937 owing to extensive poisoning (W.J.C.)

norvegicus (Erxl.)—Brown Rat. Common almost everywhere, less so at the harbour.

MUS Linnaeus

musculus L.—House Mouse. Very common.

SCIURUS Linnaeus

vulgaris leucourus Kerr—Red Squirrel. Recorded in 1897 as "Generally distributed but decreasing in numbers." No further records until 1927, but subsequently a few were seen for several years. In 1942 a small colony was reported in Harwood Dale in company with Grey Squirrels (W.J.C.).

carolinensis Gmel.—Grey Squirrel. W. H. St. Quentin brought thirty-six from Woburn, Beds., to Scampston, in June, 1906. Within a few months they had wandered four miles and one was killed at Pickering (Nat., 1907). Appeared at Hackness "prior to 1929" (W.J.C.), since then common in all suitable localities, even appearing in the centre of the town.

UNGULATA

CERVUS Linnaeus

elaphus L.—Red Deer. A number have established themselves recently in the conifer forests north of Allerston. Stags, hinds and calves have all been observed, the largest number seen at one time being two hinds and one calf (1950). As presumably these deer have escaped from Duncombe Park, Helmsley, they may not be sub-species **scoticus**, our true wild Red Deer, but descended from imported, larger races.

DAMA Hamilton Smith

dama (L.)—Fallow Deer. Five or six, presumed escapes, have become established in the Allerston Forest (G.K.G.).

CAPREOLUS Gray

capreolus thotti Loennb.—Roe Deer. Established and increasing in the Allerston Forest. Generally these and the other species of deer do little damage to the growing trees and they are tolerated by the foresters (G.K.G.).

CETACEA

Dr. F. C. Fraser

The animals included in the order Cetacea are perhaps the most interesting, certainly they are the most specialized of any of the Mammalia but nevertheless they are less well known than might be expected. Although even the smallest of them is large in size compared with the generality of say, rodents, yet their mode of life makes them difficult of observation. Most of their existence is spent under water except, of course, for the periodical visits they have to make to the surface to breathe. But even then all that is usually seen is a fleeting glimpse of the top of the head or the dorsal fin and perhaps the tail flukes. Yet the cetaceans are now known, from living specimens kept in captivity, to have a high standard of intelligence, one authority rating it as between that of the dog and the chimpanzee. They are naturally playful, vigorous creatures capable of intercommunication by the

emission of various sounds which are picked up by the highly specialized ears of their fellows. In their external modification of form to fit them to their aquatic environment as well as in the profound specialization of their internal anatomy the cetaceans merit and reward any study that can be devoted to them.

Existing knowledge about cetaceans frequenting British waters is based very largely on specimens stranded on our shores and although it must be admitted that the information obtained from such a source is gravely deficient in many respects, still certain generalizations can be made by considering the systematic records which have been kept since 1913. For instance in the Scarborough area the absence of the abundantly occurring Common Dolphin fits in with what is known of its distribution round the coast, it being almost entirely concentrated in the waters adjacent to the southern and western parts of the British Isles. The absence of Risso's Dolphin and the single record of the Bottlenosed Dolphin can be explained similarly.

Of the species represented in the Scarborough fauna the Sperm Whale is noteworthy from the point of view that few of this kind of whale have been recorded on the coasts, and all of them, like the Bridlington specimen, have been males. It is recognised that this species normally frequents warmer oceanic waters and that only the unattached bulls migrate to higher latitudes both north and south.

The Whitesided Dolphin is not a commonly occurring species anywhere on our coast while the Whitebeaked Dolphin is a characteristic element of the North Sea fauna. The latter species rarely extends into the English Channel or on the West Coast beyond the southern limit of Scotland. Both species are in fact boreal dolphins that have their main concentration to the north of the British Isles.

BALAENOPTERA Lacépède

physalus (L.)—Fin Whale or Common Rorqual. Occasionally washed ashore. Cloughton Wyke, Mar., 1910, female, 51-ft.; Sept., 1910, female, 69-ft.; Scarborough North Bay, Sept., 1921, immature, 27-ft. (W.J.C.).

acutorostrata Lacépède—Lesser Rorqual. Occasionally washed ashore. Scalby Ness, Nov., 1907, female, 30-ft., with foetus; Flamborough, Mar., 1929, small specimen stranded alive, escaped with rising tide (Det. B.M. from photographs); Robin Hood's Bay, May, 1936; Flamborough, March, 1939 (B.M.).

PHYSETER Linnaeus

catodon L.—Sperm Whale. Very rare visitor. [Bridlington Bay, male, Jan., 1937. Skeleton in B.M. (Nat., 1937).]

HYPEROODON Lacépède

ampullatus (Forst.)—Bottlenosed Whale. Only record, Flamborough, Mar., 1888 (M.B., Nat., 1888).

DELPHINAPTERUS Lacépède

leucas (Pall.)—White Whale or Beluga. Rare; off Scarborough Spa, 1903 (Nat., 1903 and 1904) (W.J.C.).

PHOCAENA Cuvier

phocoena (L.)—Common Porpoise. Frequent in small parties, usually in summer.

ORCINUS Fitzinger

orca (L.)—Killer or Grampus. Occasional; Filey Brigg, Aug., 1903, (W.J.C.) ; Scarborough, Nov., 1927, Aug., 1937 (Det. B.M.)

LAGENORHYNCHUS Gray

albirostris (Gray)—Whitebeaked Dolphin. Occasionally taken in the nets. Staintondale, April, 1919, male (E.P.) ; Robin Hood's Bay, June, 1928, female (Det. B.M.) ; Scarborough, Aug., 1938, 1937 (two records), July, 1939, Aug., 1939; Burniston, Oct., 1952 (B.M.).

acutus (Gray)—Whitesided Dolphin. Occasionally taken by local boats, but it is exceptional to find it as far south as Scarborough. Cayton Bay, Feb., 1930 (Det. B.M.) ; Scarborough, Sept., 1933, July, 1934 (W.J.C.)

TURSIOPS Gervais

truncatus (Mont.)—Bottlenosed Dolphin. Only record Filey, July, 1933, caught in salmon nets (T.H.P., teste B.M.).

THE MAMMALS OF PLEISTOCENE AND PREHISTORIC TIMES

J. G. RUTTER

The comparative paucity of our present-day mammalian fauna is in contrast to the remarkable range of animals inhabiting Britain during the Pleistocene or Great Ice Age which terminated about 10,000 years ago. Since that date a progressive decline in the number of species, particularly of the larger animals, has been largely the result of climatic changes and the activities of man. In the faunal list which follows these introductory paragraphs are records of those species known to have frequented the Scarborough region in the Pleistocene and post-Pleistocene periods down to the Roman conquest in the 1st Century A.D. The Scarborough District as defined in Volume I (p. 1) of this work is a purely artificial division and for the purpose of this chapter it is considered necessary to incorporate the records from a few sites, such as those of Kirkdale and Sewerby, which lie a little beyond this area.

The fauna of the Early Pleistocene, characteristic of the Norfolk Forest Bed, is not represented in Yorkshire but a number of valuable discoveries have produced animal remains of the Middle and Upper Pleistocene. These include the famous hyæna-den of Kirkdale, eight miles west of Pickering, and the deposits at Sewerby, near Bridlington. The former site, a cavern in the Coralline Oolite discovered in 1821, was the scene of Dean Buckland's famous excavations (Buckland 1823, pp. 1-51). Summarised accounts of Kirkdale Cave have been given by a number of authors (including Dawkins 1874, pp. 279-84; Lydekker 1907, pp. 99-100; Kendall & Wroot 1924, pp. 567-80; North 1942) and the faunal remains, many of which have been reidentified and described on a number of occasions (Owen 1846; Lydekker 1885-87; Woodward and Sherborn 1890; Reynolds 1902), are scattered among various museums. Unfortunately the absence of human artefacts and the unsatisfactory stratigraphy renders a close dating of the Kirkdale specimens impossible, although the presence of such "warm" or interglacial species as the Straight-tusked Elephant and Hippopotamus and the "cold" or glacial forms such as the Mammoth and Reindeer establishes the existence of at least two distinct assemblages. Other animals present in the cave deposits included the Hyæna, Lion, Cave Bear, Brown Bear, Woolly Rhinoceros, Slender-nosed Rhinoceros, Giant Deer, Horse and Wild Ox.

At Sewerby, near Bridlington, deposits overlying the fragment of the Pleistocene shore-line described as the "Pre-Glacial Raised Beach" and probably forming part of the "Patella Beach" of south and south-west Britain has also produced species typical of the Middle Pleistocene. These include the Straight-tusked Elephant, Hippopotamus, Slender-nosed Rhinoceros and Hyæna. The precise position of this ancient shore-line within the Pleistocene is rather

uncertain although it is undoubtedly much earlier than the last glaciation of this area. The Sewerby section was investigated by G. W. Lamplugh in 1887-88 and the mammalian remains were verified by E. T. Newton (Lamplugh 1888 and 1891).

The most important collection of Mesolithic fauna in Britain was made during the excavation of a Maglemosian settlement (dated about 7500 B.C.) at Star Carr, Seamer, by Dr. J. G. D. Clark in 1949-51. The animal remains, which included the Elk, Red Deer, Roe Deer, Wild Ox, Wolf and Beaver, were identified by Dr. F. C. Fraser and Miss J. E. King of the British Museum (Natural History) (see Clark 1949 & 1950). Dr. Fraser also determined the faunal material from the nearby sites of late Upper Pleistocene and Mesolithic date excavated by J. W. Moore on Flixton Carr.

From Neolithic times (*circa* 2000 B.C.) the animal remains from archaeological sites are chiefly of domestic species although the Wild Boar and Red Deer still form important components. Records for the Neolithic and Bronze Ages are principally from burial mounds (Bateman 1861; Greenwell 1877 & 1890; Mortimer 1905) but the excavation of several settlements of Early Iron Age date has produced some interesting lists of mammals for the closing phase of prehistoric times. The Castle Hill, Scarborough, Iron Age "A" village (dated about 500-400 B.C.) excavated by F. G. Simpson in 1921-25, provided a fairly extensive collection of animal remains, which have been identified by Dr. J. W. Jackson (Rowntree 1931, p. 404 & Jackson 1950). Two Iron Age settlements, which appear to have remained in occupation into Roman times, have been excavated at Costa Beck and Thornton-le-Dale, both near Pickering. The former was first investigated in 1893 by J. Mitchelson (see Duncombe 1899) and later by Dr. J. L. Kirk, who also excavated the Thornton-le-Dale site. The fauna from Dr. Kirk's work was examined by Miss D. M. A. Bate of the British Museum (Natural History) (Bate 1931).

INSECTIVORA

HEDGEHOG

Erinaceus europæus L.

Mesolithic : Star Carr, Seamer. Scarce (BMNH).

CARNIVORA

WOLF

Canis lupus L.

Present in Britain from the Pleistocene to Mediæval times.

Pleistocene : Kirkdale Cave. Tooth figured by Young 1822, plate XVII, fig. 2; Buckland 1823, plate 13, fig. 5.

Mesolithic : Star Carr, Seamer. Scarce (BMNH).

Bronze Age : A Late Bronze Age socketed axe was found with broken skull of wolf on Wolds near Scampston (Bateman 1861, p. 220).

Early Iron Age : Costa Beck settlement, near Pickering (Duncombe 1899).

DOG

Canis familiaris L.

A domestic species possibly introduced in Mesolithic Age but certainly present in Neolithic times.

Bronze Age : Present in a number of barrows. Skull found buried with child's skeleton in Barrow 75, Garton Slack, E.R. (Mortimer 1905, p. 224).

Early Iron Age : Castle Hill, Scarborough. Scarce (SM).
Costa Beck, near Pickering. Probably "Dog" (Bate 1931).
Thornton-le-Dale (Bate 1931).

COMMON FOX

Vulpes vulpes (L.)

Pleistocene : Kirkdale Cave. Remains figured by Buckland 1823, plates 6 & 10 (BMNH; SM).

Mesolithic : Star Carr, Seamer. Scarce (BMNH).

Neolithic : Barrow 273, Howe Hill, Duggleby, E.R. (Mortimer 1905, p. 40).

Bronze Age : Remains of "Dog or Fox" from a number of barrows on the Wolds (Mortimer 1905).

Early Iron Age : Costa Beck settlement (Duncombe 1899).

BROWN BEAR

Ursus arctos L.

A Pleistocene species which survived in Britain until historical times.

Pleistocene : Kirkdale Cave.
Bridlington (Sheppard 1904) (HM).

CAVE BEAR

Ursus spelæus Rosenmueller

Pleistocene : Kirkdale Cave. Tooth figured (as "Bear, apparently **Ursus spelæus**") by Buckland 1823, plate 6, fig. 1 (HMG).

STOAT

Mustela erminea L.

Pleistocene : Kirkdale Cave. Remains figured (as "Weasel") by Buckland 1823, plate 6, figs. 28, 29, plate 23, figs. 11-13.

WEASEL

Mustela nivalis L.

Bronze Age : Gristhorpe Barrow. Calcined bones, probably weasel, found in oak-trunk coffin (Williamson 1872, p. 15) (SM).

MARTEN

Martes sp.

Mesolithic : Star Carr, Seamer. Scarce (BMNH; SM).

OTTER

Lutra lutra (L.)

Early Iron Age : Costa Beck (Duncombe 1899).
Thornton-le-Dale (Bate 1931).

BADGER

Meles meles (L.)

Mesolithic : Star Carr, Seamer. Scarce (BMNH).
Bronze Age : Remains found in several of the Wold barrows
Mortimer 1905, pp. 204, 347) including a skull found
with human skeleton at Weaverthorpe (Greenwell
1877, p. 200).
Early Iron Age : Thornton-le-Dale (Bate 1931).

SPOTTED HYÆNA

Crocota crocuta (Erxleben)

Now confined to Africa but is frequently found in Pleistocene
deposits in Britain. Kirkdale Cave was recognised as a typical Hyæna
den by Buckland in 1822, the first to be discovered in this country.

Pleistocene : Kirkdale Cave. Very numerous. Remains figured
by Young 1822, plate XVII, fig. 15; Buckland 1823,
plates 3-6; Owen 1846, fig. 55; Reynolds 1902,
plate 5, fig. 9 (YM; HMG; SM).
Sewerby, ?*crocota* var. *spelæa* (Lamplugh 1891).

WILD CAT

Felis silvestris Schreber

Early Iron Age : Castle Hill, Scarborough, one bone (SM).
Thornton-le-Dale (Bate 1931).

LION

Panthera leo (L.)

Now confined to Africa and Asia but its range extended to Britain
in the Pleistocene.

Pleistocene : Kirkdale Cave. Teeth figured (as "Tiger") by
Buckland 1823, plate 6; Owen 1846, fig. 64
(BMNH).

RODENTIA

BEAVER

Castor fiber L.

Inhabited Britain from the Pleistocene to Mediæval times.

Mesolithic : Star Carr, Seamer. In moderate quantity (BMNH;
SM).
Neolithic : Teeth in Barrow 273, Howe Hill, Duggleby, E.R.
(Mortimer 1905, p. 28, fig. 55).
Bronze Age : Tooth in Barrow No. 98, Painsthorpe Wold, E.R.
(Mortimer 1905, p. 132, fig. 340) and implement
from tooth in Barrow II, Langton, E.R. (Greenwell
1877, p. 138).

Early Iron Age : One skull from Costa Beck settlement (Duncombe 1899).

HOUSE MOUSE

Mus musculus L.

Recorded from Kirkdale Cave (jaw and teeth figured as "Mouse" by Buckland 1823, plate 11, figs. 7-9 and Owen 1846, fig. 79) but probably a late introduction.

WATER VOLE

Arvicola amphibius (L.)

Pleistocene : Kirkdale Cave. Remains figured (as "Water Rat") by Buckland 1823, plate 11, fig. 12 (BMNH).
Sewerby (Lamplugh 1891).

Bronze Age : Bones in Barrow 284, Wold Newton, E.R. (Mortimer 1905, p. 352) and large quantity of "Vole" bones found with food vessel in Barrow XLV, Weaverthorpe, E.R. (Greenwell 1877, p. 199).

Early Iron Age : "Voles" recorded from Costa Beck settlement (Duncombe 1899).

SHORT-TAILED FIELD VOLE

Microtus agrestis (L.)

Pleistocene : ?Kirkdale Cave. Remains figured (as "Water Rat") by Buckland 1823, plate 11, fig. 11.

Bronze Age : "Field Vole" recorded from Barrow 284, Wold Newton, E.R. (Mortimer 1905, p. 352).

LONG-TAILED FIELD MOUSE

Apodemus sylvaticus (L.)

Bronze Age : Barrow 284, Wold Newton (Mortimer 1905, p. 352).

LAGOMORPHA

BROWN HARE

Lepus europæus Pallas

Pleistocene : Kirkdale Cave. Lower jaw figured by Buckland 1823, plate 13, fig. 8 (BMNH).

Mesolithic : Star Carr, Seamer, "Hare". Scarce (BMNH).

Bronze Age : "Hare" recorded from Barrow LXIII, Rudston, E.R. (Greenwell 1877, p. 251n).

RABBIT

Oryctolagus cuniculus (L.)

It is possible that the Rabbit was present in the Pleistocene of Britain but the remains from Kirkdale Cave figured by Buckland 1823, plates 10-11, may be late introductions. There are no definite records of the species from prehistoric sites in this area.

UNGULATA

SLENDER-NOSED RHINOCEROS

Rhinoceros hemitæchus Falconer

An extinct interglacial species of the Middle Pleistocene of Britain.

- Pleistocene : Kirkdale Cave (BMNH).
Sewerby. Recorded as **R. leptorhinus** Cuvier (Lamplugh 1891).

WOOLLY RHINOCEROS

Rhinoceros antiquitatis Blumenbach

An extinct glacial species of the Middle and Upper Pleistocene.

- Pleistocene : Kirkdale Cave. Teeth figured by Buckland 1823, plate 7, figs. 3-6; Owen 1846, fig. 125 (BMNH).
Gristhorpe Bay, ?**antiquitatis**, molar (SM).

HORSE

Equus caballus L.

Although the generally regarded view is that the Pleistocene Wild Horse became extinct in Britain at the end of that period, certain evidence has been produced (Speed & Etherington 1952) that suggests its survival in breeds of ponies still existing in this country.

- Pleistocene : Kirkdale Cave. Remains figured by Buckland 1823, plates 7 & 10 (HMG; SM).
Flixton Carr (Site 2). Late Upper Pleistocene deposit (Moore 1951) (SM).

- Bronze Age : Present in a number of barrows (Greenwell 1877; Mortimer 1905) including Peasholm Barrow, Scarborough (SM).

- Early Iron Age : Castle Hill, Scarborough, Iron Age "A" settlement, abundant in 1921-5 excavations. Used for food purposes. A slender-limbed animal about 13½ hands in height (SM).

Several chariot burials of Iron Age "B" culture included skeletons of small horses: Crossgates, Seamer (Mortimer 1905, 358); Arras, Market Weighton (Stillingfleet 1848).

Costa Beck settlement, small slender-limbed horse numerous (Duncombe 1899; Bate 1931).

Thornton-le-Dale settlement, small horse present (Bate 1931) (SM).

PIG

Sus scrofa L.

The Wild Boar, a temperate-forest species, became extinct in Britain in historical times. Domestic pigs were introduced in the Neolithic Age.

- Pleistocene : Kirkdale Cave (SM).
Mesolithic : Star Carr, Seamer. Scarce (BMNH; SM).
Neolithic : "Pig" recorded from Barrow 273, Howe Hill, Duggleby, E.R. (Mortimer 1905, 40) and jaws of about twenty pigs found in the Hanging Grimston

Long Barrow (*ibid*, 103-4).

Manham Hill Late Neolithic Settlement, Seamer (SM).

East Ayton Long Barrow, Wild Boar's tusks present (Londesborough 1849).

Bronze Age : Wild and domestic pig remains recorded from a considerable number of barrows (Greenwell 1877; Mortimer 1905).

Early Iron Age : Castle Hill, Scarborough, Iron Age "A" settlement. Single tusk of wild pig but domestic pig better represented although not abundant (SM).

Costa Beck settlement. Wild and domestic pig present but not plentiful. (Duncombe 1899; Bate 1931) (SM).

Remains of pigs frequently found in Iron Age "B" barrows on Wolds, sometimes in small pots, presumably as an offering to the dead (Greenwell 1906).

HIPPOPOTAMUS

Hippopotamus amphibius L.

Present in Britain during interglacial phases of the Pleistocene. Kirkdale Cave representing its northernmost record. Now confined to Africa.

Pleistocene : Kirkdale Cave. Teeth figured by Buckland 1823, plate 7, figs. 8-10; plate 13, fig. 7; Dawkins 1874, fig. 79 (YM).
Sewerby (Lamplugh 1891).

ROE DEER

Capreolus capreolus (L.)

A woodland species inhabiting Britain from the Early Pleistocene.

Mesolithic : Star Carr, Seamer, abundant (BMNH; SM).

Flixton Carr Site 1 (SM).

Neolithic : Barrow 110, Hanging Grimston, E.R. (Mortimer 1905, pp. 103-4).

Barrow 273, Howe Hill, Duggleby, E.R. (*ibid*, p. 40).

Bronze Age : From several barrows on the Wolds (Mortimer 1905).

ELK (MOOSE)

Alces alces (L.)

Present in Britain during the Mesolithic but the date of its extinction in this country appears uncertain.

Mesolithic : Star Carr, Seamer, fairly abundant. Mattocks and worked objects of antler figured by Clark 1949, plates XVII & XVIII and 1950, plate XIII (BMNH; SM).

Flixton Carr Site 1. One tooth (Moore 1951) (SM).

?Early Iron Age : Costa Beck. Possibly present (Duncombe 1899).

REINDEER

Rangifer tarandus (L.)

Inhabited Britain during the glacial phases of the Pleistocene but probably disappeared from England before the Mesolithic.

Pleistocene : Kirkdale Cave. Remains figured as " smaller species of deer " by Buckland 1823, p. 19, plate 9, figure 5.

RED DEER

Cervus elaphus L.

Present in Britain since the Early Pleistocene.

Pleistocene : Kirkdale Cave. Remains figured (as " large deer ") by Buckland 1823, plate 9, figs. 3-4 (BMNH; SM).

Mesolithic : Star Carr, Seamer. The most abundant species. Barbed points (" Harpoons ") of antler figured by Clark 1949, plates XI & XII and 1950, plates VIII and IX. Worked and unworked antlers, frontals and lower jaw figured by Clark 1949, plates X, XIV, XV, XVI & XVIII and 1950, plates X & XIII (BMNH; SM).

Flixton Carr Site 1 (SM).

Neolithic : Remains present in a number of barrows including Barrow 110, Hanging Grimston, E.R. (Mortimer 1905, p. 103-4).

Barrow CCXXII, Willerby Wold, E.R. (Greenwell 1877, p. 489) and antler picks from Barrow 273, Howe Hill, Duggleby, E.R. (Mortimer 1905, p. 27, figs. 59-60).

Bronze Age : Numerous records from barrows (Greenwell 1877 and Mortimer 1905). Antler picks from several burials including Barrow LXI, Rudston (Greenwell 1877, p. 231, fig. 34) and Barrow 54, Aldro, E.R. (Mortimer 1905, pp. 65-6, figs. 133 & 135).

Early Iron Age : Castle Hill, Scarborough. Few fragmentary antlers (SM).

Costa Beck (Duncombe 1899; Bate 1931).

GIANT DEER (IRISH ELK)

Megaceros hibernicus Owen

An Upper Pleistocene deer of exceptional size. No certain records of post-Pleistocene date (Mitchell & Parkes 1949).

Pleistocene : Kirkdale Cave (BMNH).

Bridlington (Reid 1885, p. 49).

Sewerby, ?*Megaceros* (Lamplugh 1891).

Lower Newton. Remains from Bronze Age Barrow 284, identified by E. T. Newton (Mortimer 1905, p. 352), probably derived from the chalk gravel of late Upper Pleistocene date upon which the barrow is built and of which the mound has been largely constructed.

SHEEP

Ovis aries L.

Introduced into Britain as a domestic species in Neolithic times. Remains often indistinguished from those of goat.

- Neolithic : Sheep or goat. Barrow 273, Howe Hill, Duggleby, E.R. (Mortimer 1905, p. 40).
 Bronze Age : Fairly numerous records of sheep or goat from barrows (Greenwell 1877; Mortimer 1905).
 Early Iron Age : Castle Hill, Scarborough. Rather scarce (SM). Costa Beck. Numerous (Duncombe 1899; Bate 1931).

GOAT

Capra hircus L.

Also introduced during the Neolithic.

Neolithic and

- Bronze Age : See Sheep above.
 Early Iron Age : Costa Beck. Single skull (Duncombe 1899).
 ?Thornton-le-Dale (Bate 1931).

EUROPEAN BISON

Bison bonasus (L.)

A woodland species almost exterminated in Europe. May have inhabited Britain until the Mesolithic Age.

- Pleistocene : ?Kirkdale Cave.
 Sewerby. Bison sp. (Lamplugh 1891).

WILD OX

Bos primigenius Bojanus

A temperate forest species of huge proportions, now completely extinct. It is possible that it survived in Britain until Roman times.

- Pleistocene : Kirkdale Cave. Remains figured by Buckland 1823, plates 8 & 10 (BMNH; SM).
 Mesolithic : Star Carr, Seamer. Fairly abundant. Skulls figured by Clark 1950, plate XIII and worked bones by Clark 1949, plate XVIII and 1950, plate XII (BMNH; SM).
 Flixton Carr (SM).
 Bronze Age : Remains described as "Urus" from Barrow 209, Acklam Wold (Mortimer 1905, p. 90), Barrow 284, Wold Newton (*ibid.* p. 352) and "Pit-dwelling", Garton Slack (*ibid.* p. 221. "Urus" from Barrow LXVII, Rudston (Greenwell 1877, p. 262 n).

CELTIC OX

Bos longifrons Owen

A species introduced into Britain in a domesticated form during the Neolithic period.

- Neolithic : Barrow 273, Howe Hill, Duggleby, probably **longifrons** (Mortimer 1905, p. 40).
 Manham Hill, Seamer, Late Neolithic settlement.
 "Ox" (SM).

- Bronze Age : Frequently present in barrows (Greenwell 1877, Mortimer 1905), including Peasholm Barrow, Scarborough (SM).
- Early Iron Age : Castle Hill, Scarborough, Iron Age "A" settlement. Abundant 1921-25 excavations; only species identified in 1953 excavations. A breed slightly larger than the Celtic Ox may have been present (SM). Costa Beck, near Pickering, abundant (Duncombe 1899, Bate 1931) (SM). Thornton-le-Dale (Bate 1931) (SM).

STRAIGHT-TUSKED ELEPHANT

Elephas antiquus Falconer

An interglacial species of the Middle Pleistocene.

- Pleistocene : Kirkdale Cave (YM; BMNH).
Sewerby (Lamplugh 1891 & Sheppard 1906).

MAMMOTH

Elephas primigenius Blumenbach

An Elephant of the later glacial phases of the Pleistocene. Local finds restricted to tusks and molars.

- Pleistocene : Flamborough (SM).
Kirkdale Cave. Molars figured (as "Elephant") by Buckland 1823, plate 7, figs. 1-2 (SM).
Robin Hood's Bay (Young 1822, p. 269, plate XVII, fig. 1 and Bevan 1909).
Scarborough (Young 1822, p. 270) (SM).
Wykeham (SM).

MUSEUMS

In the above list the abbreviated references to museums are not to be considered exhaustive and indicate only that certain museums possess animal remains from a particular site but not necessarily those quoted as figured. Pleistocene material from Kirkdale is scattered among a number of additional museums including the Sedgwick Museum (Cambridge), University Museum (Oxford), Geological Museum (London), Whitby Museum and Royal Scottish Museum (Edinburgh).

The Mortimer collection is in the Hull Museum, Greenwell's material is in the British Museum, and Bateman's collection is in the Sheffield Museum.

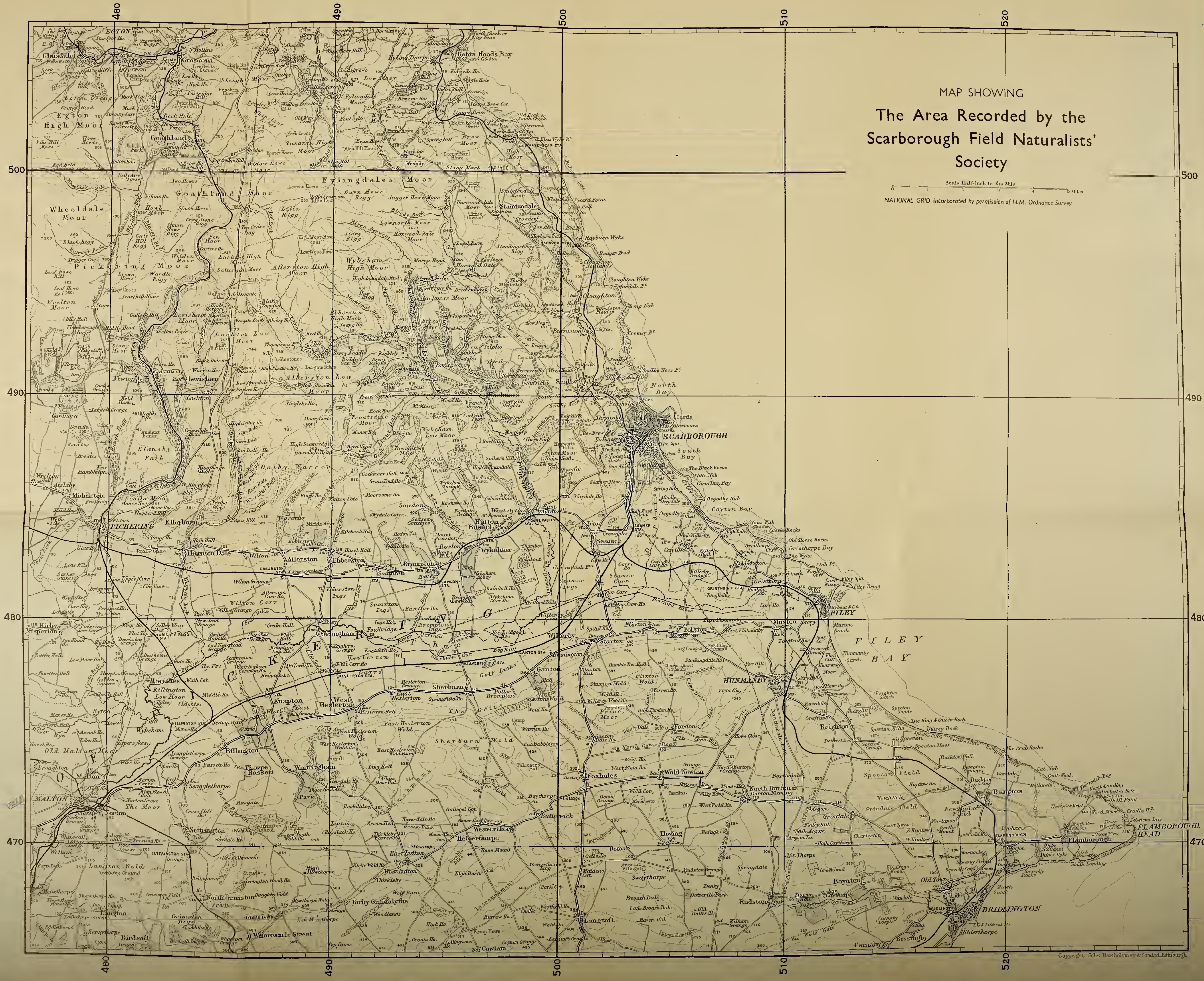
BMNH	British Museum (Natural History)
HM	Hull Museums
HMG	Hunterian Museum, Glasgow
SM	Scarborough Museums
YM	Yorkshire Museum, York

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MAP SHOWING
The Area Recorded by the
Scarborough Field Naturalists'
Society

Scale Half-Inch to the Mile
NATIONAL GRID incorporated by permission of H.M. Ordnance Survey

